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Founded by HENRY E. SIGERIST

Editor—OWSEI TEMKIN

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Editor—OWSEI TEMKIN

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MEDICAL ETHICS AND ETIQUETTE IN THE EARLY MIDDLE AGES: THE PERSISTENCE OF HIPPOCRATIC IDEALS *

LOREN C. MACKINNEY

A prevailing tendency of the reading public is its ready acceptance of derogatory generalizations concerning medieval civilization. There is, for example, the traditional generalization that tends to degrade the medieval physician to the position of quack, charlatan, faith healer, medicine man, barber surgeon. Often he is contrasted with the ancient Greek physician, to whom there have been attributed the superlative ideals which the modern age associates with the Hippocratic Oath.

As a result of the historical researches of twentieth-century scholarship, we are beginning to recognize the inaccuracies and exaggerations imbedded in such generalizations concerning the high medical standards of the ancient Greeks and the degradation of the profession during the Middle Ages. So far as the Greek world is concerned, W. H. S. Jones' *The Doctor's Oath* (Cambridge University, 1924) and the introductions

* Much of the research on this topic, in distant libraries, was made possible by grants from the Smith Fund of the University of North Carolina, and from the Carnegie Foundation. Valuable suggestions and assistance on problems of paleography and translation were generously given by Professor Elias Lowe of the Princeton University Institute of Advanced Studies, Miss Dorothy Schullian and William Jerome Wilson of the Cleveland Branch of the Army Medical Library, and Professor B. L. Ullman of the University of North Carolina.

(especially in vol. II) to his *Hippocrates* (New York, 1923 ff.), and Ludwig Edelstein's *The Hippocratic Oath; Text, Translation and Interpretation* (Baltimore, 1943) indicate the necessity of drastic modifications of the traditionally optimistic picture of the Greek medical profession as a band of high minded healers dedicated to the holy ideals of the Sacred Oath.

With regard to the Middle Ages, much has been done to correct the historical astigmatism of tradition,[1] but it has been confined almost entirely to the later medieval centuries, and especially to the supposed influence of Salerno, reputed center of a revived Hippocratic idealism and scientific Greek practice.[2] It is our purpose to show that the preceding period, from about 400 to 1100 A. D., comprising the so-called Dark Ages, had medical ideals that are worthy of a place in the historical record alongside the Hippocratic and Salernitan "codes." Like most of the institutions of Western Civilization, the regulated conduct of physicians in the early Middle Ages seems to have evolved in normally diverse fashion; also without benefit of Salerno, and with much more borrowing from Hippocrates than from Biblical or clerical authorities.

We present a number of treatises, based for the most part on the original manuscript texts. In general, we propose to let them speak for themselves as to the prevailing medieval ideals concerning the training, character, qualifications, dress, and deportment of physicians. Marked resemblances to passages from Hippocratic works, as well as from the Bible and the Church Fathers, indicate a fusion of classical antiquity with Christianity during these early centuries. Equally impressive are the

[1] Especially Mary Welborn's "The Long Tradition: A Study in Fourteenth-Century Medical Deontology" in *Medieval and Historiographical Essays in Honor of James Westfall Thompson*, edited by James Cate and Eugene Anderson (Chicago, 1938). See also Henry Sigerist's "Sidelights on the Practice of Medieval Surgeons" (Henri de Mondeville), in *Proceedings of the Annual Congress on Medical Education, Hospitals and Licensure* (Chicago, Feb. 18-19, 1935); Pearl Kibre's "Hippocratic Writings in the Middle Ages" (*Bull. Hist. Med.*, 1945, 18, 371-412, especially 402); Owsei Temkin's "Geschichte des Hippokratismus im ausgehenden Altertum" (*Kyklos*, 1932, vol. 4); and Paul Diepgen, *Die Theologie und der ärztliche Stand* (Berlin, 1922).

[2] S. De Renzi, *Collectio Salernitana* (Naples, 1852 ff.), II, 73 ff., V, 102 f., 333 ff., gives descriptions of MSS and of the Latin texts. Paul Meyer in *Romania* (1903, 32, 86 f. and 1915-1917, 44, 196 f.) describes similar texts in French from MSS in England. Leopold Delisle, *Le Cabinet des Manuscripts de la Bibliothèque Nationale* (Paris, 1874), II, 533; and M. R. James, *The Ancient Libraries of Canterbury and Dover* (Cambridge, 1903), p. 333, cite MSS. R. Cantarella, in *Archeion* (1933, 15, 305-320) cites a few evidences of the Hippocratic Oath in a "civitas Hippocratica" at Salerno before Frederick II. P. Kristeller's "The School of Salerno" (*Bull. Hist. Med.*, 1945, 17, 138-194) presents a broader and more reliable picture of early Salernitan history.

variations and miscellaneous inclusions, factors that show the constant influence of contemporary conditions and of practical experience. It should be remembered that most of these medieval ideals, like the earlier Hippocratic dicta, reflect merely the highest standards of the medical profession. We trust that the evidence presented will not only serve to correct the extremes of generalization now prevalent concerning Greek and Medieval physicians, but also will help fill a gap in modern knowledge of the development of medical ideals.

From the non-medical viewpoint of lay historians who are interested in pre-Renaissance classicism, the evidence presented is noteworthy. It corroborates the thesis of the persistence of Hippocratic ideas in an unbroken line through the early, as well as late, Middle Ages, and in non-Salernitan centers. This factor has been ably discussed in Owsei Temkin's "Geschichte des Hippokratismus im ausgehenden Altertum" and Pearl Kibre's "Hippocratic Writings in the Middle Ages" (cited in footnote 1).

Original source material for the early Middle Ages is scanty, especially for the period prior to the ninth century. However, from these early Christian centuries come three bits of evidence concerned especially with medical ethics and etiquette. A letter of advice written by St. Jerome (late in the fourth century) to a priest in Northern Italy named Nepotian reveals a vague familiarity with the Hippocratic Oath. The young clergyman was cautioned, among other things, to observe secrecy and chastity with regard to the households in which he visited the sick. He also was reminded of certain qualifications which Hippocrates had laid down for secular physicians.

A. [JEROME], TO NEPOTIAN, PRIEST. [A CLERGYMAN'S DUTIES].

It is a part of your [clerical] duty to visit the sick, to be acquainted with people's households, with matrons, and with their children, and to be entrusted with the secrets of the great. Let it therefore be your duty to keep your tongue chaste as well as your eyes. Never discuss a woman's looks, nor let one house know what is going on in another. Hippocrates, before he will instruct his pupils, makes them take an oath and compells them to swear obedience to him. That oath exacts from them silence, and prescribes for them their language, gait, dress, and manners. How much greater an obligation is laid on us [clergymen]. . . .[3]

Jerome's reference to the Hippocratic Oath as a rule prescribing "language, gait, dress, and manners" indicates either that he was not aware of

[3] F. A. Wright's translation, in *Select Letters of St. Jerome* (London and New York, 1933), Letter 52, p. 225. Nepotian, an ex-soldier and nephew of a bishop in Venetia, had asked Jerome for advice as to a young cleric's duties.

the contents of the actual Oath (which has nothing concerning these matters, with the exception of *sex*-manners), or that he interpreted the Oath very loosely to include precepts found in other Hippocratic works such as *Physician, Law,* and *Decorum*. On the other hand, his warning against immorality and the revealing of household secrets corresponds to the last two admonitions of the Hippocratic Oath. Apparently, Christians of Jerome's day had a rather vague idea of Hippocratic ideals, but had considerable respect for them.

Within a century after Jerome, the Germanic law codes of the Visigoths were taking shape in Spain. In these, and later revisions thereof, there is a regulation concerning women patients that reflects the same age-old sex problem of which the Hippocratic Oath and Jerome's letter gave warning. The Visigothic code reads as follows:

B. No physician shall presume to bleed a [freeborn] woman in the absence of [some of] her relatives . . .; the father, mother, brother, son, uncle or some neighbor. . . . X solidi [penalty]. . . . On such occasions scandals multiply. . . .[4]

About two centuries after Jerome, in the Ostrogothic kingdom of Italy, Cassiodorus in writing to the supervising physician of the royal household referred to "certain sacred oaths of a priestly nature" by which medical students were obligated, and also to the standards of practice set up for a governmentally regulated profession.

C. [He stressed the merits of the healing art as a worthy calling in that it concerns both the present and future well being of patients and aids them when other (i. e., spiritual) means fail. He warned physicians to avoid quarrels, envy, all forms of wickedness, and artifices of healing. He exhorted them to ever seek knowledge, to read the works of the ancients and to manifest zeal and cheerfulness in treating the sick, and also purity in their personal lives. For an effective bedside manner, the following advice was given]: Let your visits bring healing to the sick, new strength to the weak, certain hope to the weary. Leave it to clumsy [practicioners] to ask the patients they are visiting whether the pain has ceased and if they have slept well. Let the patient ask you about his ailment and hear from you the truth about it. Use the surest possible informants. To a skillful physician the pulsing of the veins [*venarum*] reveals the patient's ailment while the urine analysis indicates it to his eye. To make things easier, do not tell the clamoring inquirer what these symptoms signify. . . .[5]

Somewhat different from the governmental regulations of Visigothic

[4] Visigothic code, book XI, 1 (*MGH, Leges,* Sect. I, vol. I, 400).

[5] The original Latin text can be found in *MGH, Auct. Antiq.,* XII, 191 f.; also in M. Neuburger, *Geschichte der Medizin* (Stuttgart, 1911), II, part i, 246 f.; and L. MacKinney, *Early Medieval Medicine* (Baltimore, 1937), p. 163 ff. There is a free translation into English in T. Hodgkin, *Letters of Cassiodorus* (London, 1886), p. 313 f.

Spain and Ostrogothic Italy are the medical ideals expressed in numerous epistolary treatises that appear in the earliest medical manuscripts of the Middle Ages. Most of these manuscripts were written in North-European monasteries during the eight, ninth, and tenth centuries, an era that is often referred to derogatorily as the age of monastic medicine. To be sure, the monastic spirit dominated the compiling of the medical handbooks of the period, but as we shall see, the result was classical as well as pious, and secular as well as ascetic.

Very few of these monastic treatises subordinated Hippocrates and classical medicine to Christ and clerical ministrations in a manner as marked as that manifested in Jerome's letter, or in the sixth-century writings of Cassiodorus, notably the chapter "Concerning Monks Entrusted with the Care of the Sick" in his *De Institutione Divinarum Litterarum* (chapter 31).

One of the most pious expressions of the monastic ideal of medicine is found in the introduction to a manuscript handbook that was compiled probably in a German monastery, late in the eighth century, was recopied about a century later in its present manuscript form (Bamberg MS L III 8), only to be taken to Bamberg Cathedral somewhere around the year 1000 and kept there even to the present day. The author of the introduction was intent on reconciling the late classical medical works, which comprised most of the manuscript, with Christian monastic ideals. In even more detailed and pious fashion than either Jerome or Cassiodorus, he cited the Holy Scriptures, Pope Gregory I, Isidore of Seville, Bede, etc., to show the divine purpose in human medicine.[6]

D. . . . Wherefore one ought not to spurn earthly medicine since he knows it is advantageous rather than harmful and since it has not been held in contempt by holy men. . . . [St. Luke, St. Cosmas, and St. Damian were physicians]. Wherefore let us honor the physicians so that they will help us when sick, remembering [the word of] that wise one [Ecclesiasticus 38:1. Vulgate]: "Honor the physician of necessity for the Most High created him." And do not hesitate to take what potions he gives you. That same wise one [Ecclesiasticus 38:4] said "The Most High created medicine from the earth, and the prudent man will not reject it." Therefore he who does not seek medicine in time of necessity deserves the name stupid and imprudent. I say that it is wise to do well by the physician while you are well so that you will have his services in time of illness. . . . God wishes to be honored by his miracles performed through man. According to Isaiah [26:12] whatever good is done by man is effected by God; he said "The Lord does all of our works through us." [Christ] himself in the Gospel [Luke 18:27 ?] said

[6] The text was described and edited by Sudhoff in *Archiv Gesch. Med.*, 1914, 7, 223-237.

"Without me you can do nothing." . . . [The treatise closes with a lengthy exhortation for physicians to serve ailing humans, whether rich or poor, and with a view to eternal rather than earthly rewards.[7] This admonition, derived from the above mentioned passage of Cassiodorus' "Concerning Monks Entrusted with the Care of the Sick," is accompanied by his list of recommended readings and his warning that monastic healers should put their trust in the Lord rather than in herbs and human counsels. The exhortation ends on the following note of Christian idealism:] Aid the sick, your reward coming from Christ, for whoever gives a cup of cold water in His name is assured of the eternal kingdom where with Father and Holy Spirit He lives and reigns for eternity. Amen.

The remainder of the Bamberg manuscript, which is our earliest manuscript source, exemplifies the more practically secular and classical aspects of monastic medicine. Like most early medical manuscripts it contains Latin translations or condensations of Graeco-Roman works on remedies, diet, monthly regimen, substitute medicines, and other miscellaneous bits of information. Among the last mentioned items is a fragment of treatise K(a) (quoted below) which reiterates the chief points in the Hippocratic Oath. This manuscript with its combination of Christian piety and classical idealism typifies the more conservative aspects of monastic medical literature during the early Middle Ages. So far as medical ethics and etiquette are concerned, there are more important manuscript sources.

Somewhat later than the Bamberg manuscript, in Central France a much more detailed medical handbook was compiled (Paris, Bibliothèque Nationale, MS 11219).[8] In it are found many treatises, including a commentary on Hippocrates' Aphorisms (in Latin), a book (attributed to him) on various medical topics, another on diseases and cures, gynecology and herbs, also an antidotary and a miscellany of epistolary treatises attributed to Hippocrates and Galen. The epistolary treatises appear immediately after Hippocrates' Aphorisms, under the title *Liber Epistolarum*. The first seven, which are actually brief treatises concerning medical training, ethics, and etiquette, constitute one of the most complete cover-

[7] Similar warnings are given elsewhere in the manuscript, on a folio (5) of verses entitled "Cosmas, Damian, Hippocrates, Galen." They read in part as follows: "Sick one, pay the physician what you owe lest when ills return no one will visit you. Physician, care for the poor as well as the powerful. If the patient is rich you have a just occasion for profit; if poor, let one reward [spiritual] suffice. . . ."

[8] A few scholars have dated the manuscript 9-10th century. Professor Lowe was so kind as to check it recently and assures me as to the 9th century dating. It once belonged to a monastery in Luxemburg. Professor Lowe believes that it originated in the Loire region and that it may have been one of the manuscripts used by the humanistic cleric, Lupus of Ferrieres.

ages of these subjects in early manuscript literature. Strange to say, this part of the manuscript has been neglected, even by specialists in medieval medical history.[9] The collection is especially important in that, in combination with similar treatises in other early manuscripts, it reveals a North-European literature which, amidst monastic influences, reflected the classical ideology of Hippocrates. A parallel collection, also strangely neglected, is found in a slightly later manuscript at Chartres (MS 62). This literature, stemming from transalpine monasteries, antedates the earliest examples from Salerno, the much publicized center of Hippocratic ideas, once referred to by Fielding Garrison as "the isolated outpost of Greek medical tradition in the Middle Ages."

The chronological list (below) of manuscripts which contain the treatises under consideration serves to indicate the importance of non-Salernitan, North-European centers. Obviously the present location of manuscripts (almost all of them in the North) and their datings (all subsequent to 800 A. D) do not eliminate the possibility of pre-ninth-century, Italian, sources for the material found therein. In fact, scholars are convinced that most of the classical element in early Medieval medical literature was derived from compilations and translations (from the Greek) that antedate the ninth-century activities in Northern Europe commonly referred to as the Carolingian Renaissance. The earliest centers of translating are thought to have been in Byzantine Italy, in and about Ravenna, during the fifth, sixth and seventh centuries. Medical works in both Greek and Latin were also current in Southern Italy in Cassiodorus' day (ca. 550). It is possible therefore that we are concerned with a Graeco-Latin medical literature that was originally a product of the Byzantine classicism of Ravenna and the monasticism stemming from the Vivarium and Monte Cassino.

[9] Hirschfeld's otherwise excellent survey of "Deontologische Texte des frühen Mittelalters" (*Archiv Gesch. Med.*, 1928, 20, 353-371) fails even to cite the manuscript, though he presents the texts of some of the treatises contained therein, from later manuscripts. He also omits (perforce) treatises that are unique to this manuscript. The manuscript is likewise unmentioned in Laux's article on "Ars medicinae" (*Kyklos*, 1930, 3, 417-434) save for the citation of a list of surgical instruments, contained therein. The manuscript is cited, but not for the texts with which we are concerned, in H. Diels, *Die Handschriften der antiken Aerzte* (Berlin, 1905) I, 53.

Manuscripts and Editions of the Treatises.[10]

Bamberg, L III 8, 9th century, folios 1-6 (Sudhoff, Hirschfeld, Laux)
Paris, BN, 11219, 9th century, folios 12-15
St. Gall, 751, 9-10th century, pp. 337-339, 354-359 (Hirschfeld, Laux)
Glasgow, Hunter, V. 3. 2, early 10th century, folio 27
Karlsruhe, 120, 10th century, folios 182-184 (Rose)
Chartres, 62, 10th century folios 1-2
Brussels, 3701-15, 10th century, folios 5-7
Monte Cassino, 97, 10th century, p. 4 (De Renzi, II, 73)
Rome, Vat. Barberini, 160, 11th century, folio 286
Montpellier, 185, 11th century, folio 100 (Sigerist)
Copenhagen, 1653, 11th century, folio 72 (Laux)
Zurich, C 128/32, 11th century, folios 103-104 (Hirschfeld, Laux)
Brussels, 1342-50, 12th century, folios 1-2 (Hirschfeld, Laux)
Rome, Angelica, 1502, 12th century, folio 1 (Giacosa, Hirschfeld)
Breslau, 1302, 12th century, folio 184 (De Renzi, II, 74)
Edinburgh, A. 5. 42, 12th century, last folio
Rome, Vat. Regina, 1443, 12-13th century, folio 39
Rome, Vat. 2376 folio 209 (cited by Diels, I, 123)
Rome, Vat. 2417 folio 275 (cited by Diels, I, 123)
Carpentras, 318, 13th century, folio 79 (Sigerist)
Paris, BN, 15456, 13th century, folio 186
Paris, BN, 7091, 14th century, folio 1 (De Renzi, V, 333)
London, BM, Cotton, Galba, E. IV, 14th century, folio 238 (Rose)
Escorial, a IV 6, 14-15th century, folio 197 (Hirschfeld)
Paris, BN, 6988A, 15th century, folio 121

Using the ninth-century Paris manuscript (BN 11219) as a sort of master copy, we present the translated texts in topical groups; first the more idealistic ones concerning Spiritual Aspects of Medicine and Qualifi-

[10] In practically all cases the dating of the listed manuscripts is based on personal examination (either of the original or of photoreproductions), and also on the opinions of specialists such as Elias Lowe and B. L. Ullman. Where there are printed versions of the manuscript text, the editor's name appears in parenthesis after the manuscript listing; viz., (Sudhoff) for Sudhoff's article cited above in note 6; (Hirschfeld) for Hirschfeld's article cited above in note 9; (Laux) for Laux's article cited above in note 9; (De Renzi) for De Renzi's *Collectio* cited above in note 2; (Sigerist) for Sigerist's article "Early Mediaeval Medical Texts in Manuscripts of Montpellier" (*Bull. Hist. Med.*, 1941, 10, 31 f.); (Giacosa) for P. Giacosa's *Magistri Salernitani nondum editi* (Turin, 1901), p. 360; (Diels) for Diels' *Die Handschriften* cited above in note 9; and (Rose) for V. Rose's *Anecdota Graeca et Graecolatina* (Berlin, 1870), II, 275 f.

cations and Training of the Physician; then those of a more practical nature concerning Etiquette, Women Patients, Pulse Taking, Sick Calls, and other aspects of the "Bedside Manner."[11]

I. SPIRITUAL ASPECTS OF MEDICINE

The first treatise to be presented is similar to the Bamberg introduction (above, treatise D), in that it is predominantly religious in its approach to the subject. Although the Paris treatise is the briefer of the two, it is more emphatic with regard to the divine aspects of healing. From beginning to end the healing of the body is subordinated to the healing of the soul.

E. For All Healing Divine Medications are to be Used.[12]

For all healing divine medications are to be used because divine power is the proper agent for restoring mortal bodies. It is proper to call such an one physician who is responsible for the health of the soul and the well being of the body . . . [the text continues concerning Christ's ordaining of illness for man's good, also food and drink for his bodily welfare, and ointments, herbs, and medical practitioners for his bodily ills. It ends on a spiritual note, viz.,] He who provides for the healing of soul and body, being made immortal by every divine potentiality, merits pristine health and also security from his own guilt.

In addition to treatises of this sort, occasionally one finds brief passages of an other-worldly nature in otherwise secularly-minded treatises. For example, in a minor, anonymous text which Sigerist edited from the eleventh-century Montpellier manuscript (185), and which exists in at least three other manuscripts (Glasgow, Hunter V. 3. 2, folio 27; Rome, Vat. Barberini, 160, folio 286; Codex Fritz Paneth, folio 175) there is the following: "Medicine was created by the Most High [Ecclesiasticus, 38: 1, 4. Vulgate]. He who fears not God will seek out the physician and not find healing, whereas many of whom physicians have despaired, have been healed by God."

[11] In some cases we have checked or amplified the Paris master text by collation with later manuscripts or editions, notably Chartres MS 62, Rose's version (*op. cit.*, p. 243 ff.) and a late B. M. MS. Furthermore, a few of the treatises presented do not appear in the Paris manuscript. All such variations are indicated in the footnotes. Brackets are used throughout the translations to enclose words or phrases (not in the original text) which have been added in order to clarify the meaning. However, we have not pressed this procedure meticulously since the translations are somewhat free renderings of the original Latin texts; this is not only for purposes of clarification, but also because of numerous variants and uncertainties in the manuscript versions.

[12] This treatise is also found in Brussels MS 3701-15, in similar but not identical wording.

The same Biblical text was cited in support of physicians by other monastic compilers. We have already noted (above, treatise D) that as early as the eighth century this, and other Scriptural passages were quoted to prove that those who refused the God-given ministrations of physicians were "stupid and improvident." A century later, Rabanus Maurus, in the medical section of his *De Universo* (xviii, 5), followed the same line of thought. It seems likely that his section entitled "Medical Healing is not to be Spurned" was borrowed from the eighth-century, Bamberg treatise, though in condensed form.[13]

A briefer, but similarly pious, defense of physicians occurs in a Brussels manuscript (3701-15, f. 5). The author, after a brief discussion of the four parts of the body and the four humors, added the following postscript: "Now let us speak of the minister of nature; the physician, the minister of nature who fights against illness. The physician ought to know the past, to perceive the present, to recognize the future.[14] Luke said in the Bible that it is given to physicians to be the Lord's workers.[15] Like-

[13] This pious factor in much of Rabanus *De Universo*, both in the medical and non-medical portions, was brought to my attention years ago by Edward K. Graham in the course of his graduate research. The point is noteworthy in connection with the generalization frequently made, to the effect that Rabanus Maurus' treatment of medicine is more extensive than that of his chief source, Isidore of Seville's *Etymologies*. Rabanus' work, as a matter of fact, is much *less* extensive in actual medical information. As stated by Mr. Graham in his thesis on Rabanus Maurus: "By far the greater part of Rabanus . . . is made up of fragmentary portions of Isidore's material supplemented by exegesis. . . . Rabanus copies part of Isidore, omits part, and substitutes exegesis for the part omitted." Mr. Graham's dictum applies to the passage in question, "Medical Healing is not to be Spurned." Up to this point Rabanus seems to have copied his medical data from Isidore's *Etymologies* (iv. ch. 1 ff.). Omitting chapters 6 (last part), 7-8 of Isidore, he copied only the title of chapter 9, S. 1 ("Medical Healing is not to be Spurned"). In place of Isidore's text he substituted a highly moralistic and Scripture-laden treatment of the topic. This material is so similar to the Bamberg introduction (above, treatise D) that one is tempted to assume that Rabanus, realizing that his Isidorean borrowings were conspicuously un-Christian, decided to shift the emphasis to the religious aspects of healing. For this, the Bamberg treatise was an ideal source.

[14] This past-present-future theme, which appears in modified form in treatises C (above) and F (below), stems from chapter I of the Hippocratic *Book of Prognostics*, of which there were Latin versions in Italy as early as the fifth century, and of which there are extant copies in ninth-tenth century manuscripts (See Kibre, "Hippocratic Writings . . ." p. 387 f.). The theme was repeated in Galen's commentaries on the Hippocratic *Epidemics* (Kühn edition, XVII, part I, 147), in Isidore's *Etymologies* (iv, 10) and in pseudo-Soranus *Quaestiones Medicinales*, alias *Horus Ysagoge* (Chartres MS 62, folio 1; also edited from late-medieval MSS by Rose, *op. cit.*, II, 243 ff., see esp. 246).

[15] Although the sense of the Biblical quotation vaguely resembles several passages in Luke, the Latin wording (*datur medicis ubi operatus dominus*) is closer to the text of

wise, Hippocrates said that the physician achieves just as much as God permits." [16]

The second of the Paris treatises is all-inclusive in scope and highly idealistic in tone. The absence of any reference to classical medicine is noteworthy. On the other hand, when compared with the Bamberg Introduction (treatise D, above) and the first Paris treatise (E, above), it is decidedly mundane in that it reflects little or no concern for the monastic ideal of spiritual healing. It is an excellent expression of the secular qualifications of early medieval physicians.

II. QUALIFICATIONS AND TRAINING OF THE PHYSICIAN

F. Arsenius to Nepotian,[17] his sweetest son, greeting . . . [several lines of polite, inconsequential matter]. I shall point out what you earnestly desire to know as to what sort of person a physician ought to be. First, he should test his personality to see that he is of a gracious and innately good character, apt and inclined to learn, sober and modest; a good conversationalist, charming, conscientious, intelligent, vigilant and affable, in all detailed affairs adept and skillful. Our art also requires that one be amiable, humble, and benevolent. Humility ever seeks knowledge, ever accumulates, and never goes to excess or offends. Good will restores sweetness, inspires sagacity, maintains remembrances in the heart, love in the soul, discipline in obeying, wisdom imbued with fear and diligence, and respect, for he who loves not honors not and will not be skillful or sure in his work. [The physician should] not be hesitant or timid, turbulent or proud, scornful or lascivious, or garrulous, a publican, or a woman-lover; but rather full of counsel, learned, and chaste. He should not be drunken or lewd, fraudulent, vulgar, criminal or disgraceful; it is not right for a physician to be taken in a fault or to blush for shame in the presence of his people. Even as love of wisdom reveals itself in manners, so let him be irreproachable for he is chosen to a higher honor. Medicine is not to be scorned, but invoked. Inasmuch as the physician has high honors he should not have faults, but instead discretion, taciturnity, patience, tranquility, and refinement; not greed but more of restraint and subtilty, rationality, diligence, and dignity. One of the virtues of this art is zeal in the acquisition of wisdom, long

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Isaiah 26: 12 (*omnia opera nostra operatus est nobis dominus*), as it is cited in treatise D above).

[16] The Hippocratic *Decorum* (ch. vi) reads as follows: "The Gods are the real physicians. . . ."

[17] There is no means of surely identifying either Arsenius or Nepotian, though both names appear in records from the early Christian centuries (e. g., note Jerome's correspondent, above, treatise A; and see Hirschfeld's suggestions *op. cit.*, p. 358 f.). Medieval writers were very free in their attribution of epistolarly treatises to various authors, famous or otherwise. The letter in question appears in three early manuscripts; the Paris master manuscript and also Brussels MS 3701-15 and St. Gall MS 751. Hirschfeld's edition is based on the Brussels and St. Gall MSS; our translation is based on all three. There are frequent variants in the readings.

sufferance, and mildness. [The physician should strive for] a cheerful pleasant approach; for even as light illuminates a home and makes men see in dark shadows, so a cheerful physician turns sorrow and sadness into joy, and comforts all of the members of his patient, and restores his spirits. According to the secret teachings which should be pursued in medical instruction, let the physician be cheerful because he is the gentle helper [of his patients]. Enlivening the body, checking illnesses, drying up humors, he prescribes diet, eliminates fevers, warms the marrow, gives remedies, recreates the vital power. He notes the symptoms of ailments and applies beneficial medicines. He shows himself an expert in the varieties of herbs and a healing practitioner who prepares intelligent remedies for the reviving of men's strength. He clarifies the present, reveals the eternal future and senses inner factors. The physician is said to be the preceptor of healing, the liberator, the opportune worker who renders aid in time of need.

The opening lines of still another Paris epistle indicate the existence of an additional letter on the same subject, with however a somewhat more practical approach. Although the folio of the Paris manuscript is badly mutilated, a Chartres manuscript of slightly later date (MS 62, 10th century), along with a fourteenth-century London manuscript (BM, Cotton, Galba, F. IV, folio 239) provides the complete text.

G. What Sort of Person a Physician Should Be

Let us now explain what sort of person a physician should be. He should be gentle in manners and modest, with the proper amount of reliability.[18] He should be neither lacking in knowledge, nor proud; he should take care of rich and poor, slave and free, equally for among all such people medicines are needed. Moreover, if certain compensation is offered, let him accept rather than refuse. If however it is not offered, do not demand it because, however much each one pays, the compensation for medical services cannot be equated with the benefits. Moreover, enter the homes you visit in such a manner as to have eyes only for the healing of the sick. Be mindful of the Hippocratic Oath. and abstain from all guilt and especially from immorality and acts of seduction. Keep secret everything that goes on or is spoken in the home. Thus the physician himself, and the art, will acquire greater praise. The physician should have slender, fine fingers so as to be agreeable to all and to be subtle in his touch. Hippocrates himself [*Physician*, ch. I] said this. The physician should be no less agreeable in conversation, and not wanting in philosophy. He should be unassuming in manners so that both perfection in the art and good manners may be harmonized insofar as is possible.

Still another of the Paris epistles (found in the Chartres and London, MSS, also in Edinburgh MS A. 5.42) deals at greater length with the practical aspects of the subject, introducing the question of the specific qualifications necessary for those who plan to study medicine. The im-

[18] This and the four succeeding sentences, are also found in a garbled treatise in St. Gall MS 571 (edited by Hirschfeld, p. 363).

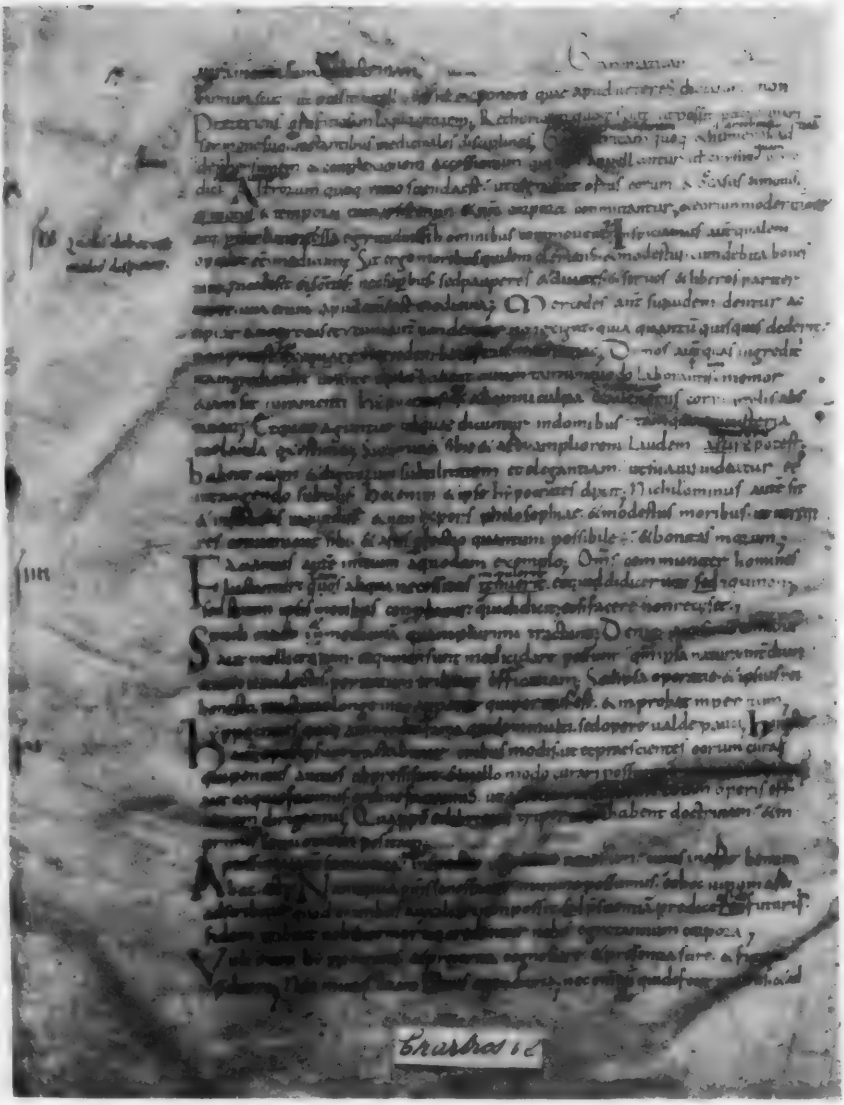

FIG. 1

Chartres MS 62, 10th century, folio lv.

Portion of a series of letters including the text of treatises G and I which occur in mutilated form in Paris BN MS 11219.

portance of hard study is emphasized and it is advised that students start early, at the age of fifteen. The author of the treatise showed no apparent aversion to the classics; Erasistratus was cited in support of the doctrine of a well balanced education.

H. Concerning Those Who are Starting in the Art of Medicine.[19]

We begin concerning him who is starting training in the art of medicine. Let him be of that transitional age, between boyhood and manhood, that is a youth of fifteen which is an apt age for taking up the sacred art of medicine. Let him be neither very large nor very small in size, and such that he may live his youth freely and his old age usefully and easily.[20] In character and spirit let him be zealous and talented, indeed keen so that he may understand readily and be teachable; also strong so that he may be able to endure the recurring labor and the terrible sights that he encounters. He should make the cases of others his own sorrow. Let him be less concerned with other disciplines, but careful about his manners. According to Erasistratus, the greatest felicity is to keep things in balance so that one is both accomplished in the art [of medicine] and also endowed with the best of manners. If either one is lacking, better to be a good man without learning than a skillful practitioner with depraved manners. If indeed the lack of good manners in the art seems to be compensated by [professional] reputation, greater is the blame, for professional knowledge can be corrupted by blameful manners. But if both of these are faulty, I adjure you who are aware of it to withdraw from the art. He who takes up the art of medicine ought also to have knowledge of the nature of things so that he will not seem to be inexperienced therein. And he should be well endowed and wise, indeed adorned with all good characteristics.

The torn folio of the Paris manuscript has a fragment of another treatise (duplicated in the Chartres and London MSS already cited, and also in Edinburgh A. 5. 42) which deals with the training of the physician, but

[19] In the Paris manuscript the treatise is preceded by an exhortation to hard study, viz.: "If one wishes to acquire a knowledge of medicine, first of all let him preserve what he learns by committing it to memory. Then he will be able more frequently to warn disciples that by such gradual acquisition of knowledge they may acquire skill in the art." In the later manuscripts (Chartres, Edinburgh, London) the treatise (H) is the first of a series of letters, and is preceded by an introduction concerning the traditional Greek founders of medicine and methods of training young physicians. The latter section reads as follows: "I begin to tell of the best teaching method for those who are beginning to study the art of medicine. First we shall take up the physician himself, then the art, and afterward medicine itself. Plato, speaking of everything that comes into a course of study, said that the one who has a knowledge of the thing concerning which he is questioned is best able to talk. Since in all things which come under consideration it is necessary to be obliging and helpful to attentive listeners, the following proceedure is best. A middle ground is necessary because of the double problem, concerning him who is beginning the art and concerning him who has already done so. [continues as in treatise H] We begin. . . ."

[20] For further details as to the physical qualifications of the student, see below, treatise K.

in somewhat more academic fashion, reminiscent of Isidore of Seville's *Etymologies* (iv, 13).

I. On Giving the Sacred Oath and What Sort of Books One Should Read.

He who wishes to begin the art of medicine and the science of nature ought to take the oath and not shrink in any way whatsoever from the consequences. And then by this process of oath taking let him take up the teachings. Let him learn the art of grammar to the point where he can understand and expound the sayings of the ancients, omitting all artificialities of speech. Also let him learn rhetoric so as to be able to defend with his own words those who are carrying on medical teaching; also geometry so that, just as one knows the measuring and numbering of fields, so also he may recognize the ailments called *typi* [fevers] and the crises which are produced by *periodici* [fevers]. He must also know the science of the stars so as to recognize their rising, setting, and other movemonts, and the seasons of the year, since our bodies change along with these, and since human illnesses are affected by their normality and abnormality.

The above quotations make it clear that a wide range of material concerning the qualifications and training of physicians was available to the North-French compilers of the Paris and Chartres manuscripts. There are also two additional treatises, not found in these manuscripts, but occurring in four later manuscripts (only one of which is earlier than the eleventh century): St. Gall, 751; Zurich 128/32; Copenhagen 1653; and Brussels 1342-50. The Copenhagen manuscript (late eleventh century), of South-Italian origin, is one of our three earliest traces of Salernitan influence. The subject matter of the two treatises contained in the four manuscripts is much like that already presented; a mingling of high ideals with practical advice, apparently descriptive of secular physicians.

J.[21] Before the physician takes the Hippocratic Oath, and before he attempts surgery, he ought to heed words of wisdom. If he is apt at learning he will heed what his preceptor says. By its very nature this oath is an acceptable work. Even as the entire earth is not suitable for growing seed, but only that part which receives it and brings forth fruit, so also not all of the earth is suitable to receive teaching, but only that part which by a good determination is able fully to retain it. Once there was an ancient. He was not very chaste. When in due order he instituted the canon of medicine, everything he contributed was good.[22] Certain of his disciples who surrendered themselves wholeheartedly to their teachers, remained there and persisted to the end in the art which they wished to learn. Those

[21] The treatise appears, with many variants, in all except the Zurich manuscript. The Latin text has been edited by both Laux and Hirschfeld (cited above, note 9).

[22] The Brussels manuscript (1342-50) amplifies the passage concerning "the ancient" with references to Hippocrates, the Empiricists, Julius alias Ceron, and "the citizen of Larissa" who "instituted all philosophy and dialectic and geometry and music."

who changed from one teacher to another, when new ones appeared, not only acquired nothing, but even went unenlightened. To the wise this seemed useful, but to the foolish a joke and a laughing matter.

K.[23] Therefore, before expounding the Hippocratic Oath it is necessary to explain what sort of person a student of medicine should be. First he should be a freeman by birth, noble in character, youthful in age,[24] of medium size, sturdy, apt in all things; indeed, as in body, so in spirit; cognizant of good counsel, benign, virile, benevolent, chaste, endowed with unusual diligence of mind, audacious without being wrathful, not hardheaded, quick to perceive and understand what is taught, one who knows how to speak with brevity, elegant, with a good memory and not indolent. First of all he should be taught grammar, dialectic, astronomy, arithmetic, geometry and music. He should avoid rhetoric lest he become talkative. He should be taught philosophy along with medicine . . . [to be continued below as treatise K(a), on dress and deportment].

The last of our treatises on Qualifications and Training, is another of the Paris epistles; so far as I know, the only extant copy. It is probably the most important of the collection in that manuscript. Outstandingly practical and classical in tone, at the outset it purports to be "Admonitions of Hippocrates" and references are made to other classical authors such as Epicurus. It is broadly all-inclusive in subject matter, taking up successively the qualifications of the physician, medical training, dress and the bedside manner, even to such matters as the method of taking the pulse and the necessity of making three calls each day. Due to its wide scope the treatise serves as a recapitulation of most of the topics already presented, and as an introduction to various aspects of medical etiquette.

L. Letter Especially to be Read Concerning the Learning of the Art of Medicine.

[Qualifications and Training]

Let us begin to expound the admonitions of Hippocrates. Whoever wishes to become proficient in this art ought to be capable of unbounded literary effort, so that by longstanding perusal of various volumes his perception and discernment

[23] The treatise appears in all except the Brussels manuscript (1342-50). The title and text vary considerably in the three manuscripts.

[24] The expression "youthful in age" occurs in only two of the manuscripts (Zurich C 128/32, and Copenhagen 1653). The Latin term used, *puerum*, usually applies to boys up to the age of about 16. An earlier example of emphasis on youthfulness is found in section 7 of Charlemagne's Thionville Capitulary (805), where it was urged "that *infantes* be sent to learn [medicine]." (*MGH, Leges*, Sect. II, I, 121). "Instruction from childhood" is also stressed in the Hippocratic *Oath* and *Law* (ch. II). See also treatise H (above) for a reference to youthful students of medicine.

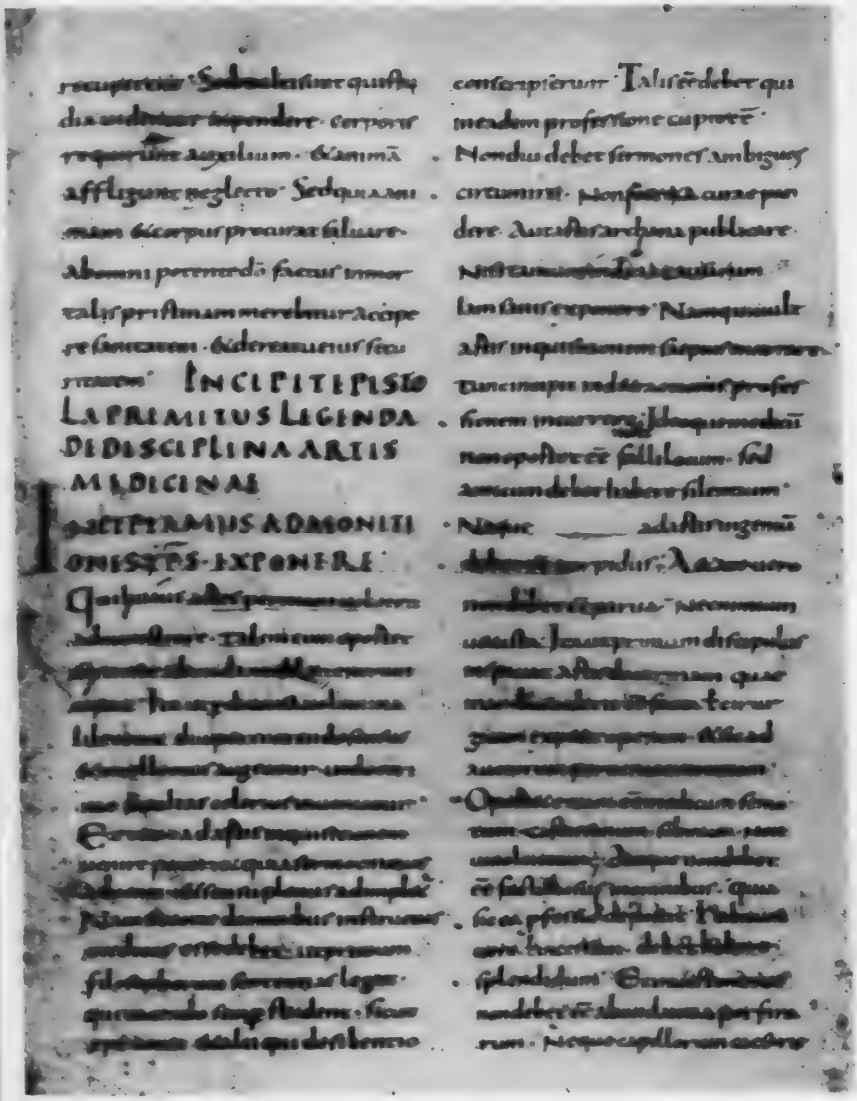

FIG. 2

Paris, Bibliothèque Nationale, MS 11219, 9th century, folio 12v.
Text of treatise L, "Admonitions of Hippocrates. . . ."

increase to the point where facility in teaching is more readily acquired.[25] Then he can proceed to the investigation of the art because he has become conversant with it and understands it fully. Before [studying medicine] the physician should be instructed in all subjects.[26] First let him read the opinions of the philosophers, who always study in silence, even as Epicurus and others who have written about silence. Such ought he to be who wishes to enter this profession. He ought not to indulge in long ambiguous discourses, nor to spread abroad his private cures or the secrets of the art, excepting only data on cases already cured. He who is willing to repeat constantly what he finds out about the art of medicine tends to the profession of detractor. A physician ought not to be a deceiver. Like a friend he should maintain silence. Nor should the candidate for the art be a dullard. In age he should be neither too young nor too old, but such that at the outset, as a learner, he may look into the theories of the art which he will see performed by hand, or may seek the practice of surgery. Thus he may arrive at a knowledge of the authorities.

[Medical Etiquette]

The physician ought also to be confidential, very chaste, sober, not a winebibber, and he ought not to be fastidious in everything, for this is what the profession demands. He ought to have an appearance and approach that is distinguished. In his dress there should not be an abundance of purple, nor should he be too fastidious with frequent cuttings of the hair. Everything ought to be in moderation, for these things are advantageous, so it is said. Be solicitous in your approach to the patient, not with head thrown back [arrogantly] or hesitantly with lowered glance, but with head inclined slightly as the art demands. . . .[27] [to be continued below as treatise L(a), on pulse taking, etc.,].

K(a). [continuation of treatise K, above] He ought to hold his head humbly and evenly; his hair should not be too much smoothed down, nor his beard curled like that of a degenerate youth. He should not use ointment to excess on his hands or the tips of his fingers.[28] He should wear white, or nearly white, garments. He should be lightly clad, and walk evenly without disturbance and not too slowly. Gravity signifies breadth of experience. He should approach the patient with moderate steps, not noisily, gazing calmly at the sick bed. He should endure peacefully the insults of the patient since those suffering from melancholic or frenetic

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[25] This sentence is also found in a brief St. Gall treatise from MS 751. (edited by Hirschfeld, p. 363).

[26] For details concerning the subjects a young physician ought to study, see above, treatises I and K, and compare with Isidore's *Etymologies*, iv, 13.

[27] St. Gall MS 751 and Escorial MS a IV 6 (edited by Hirschfeld, p. 363) have a somewhat condensed version of the subject matter of the entire paragraph on Medical Etiquette. The same topic is treated in great detail (with suggestions as to the physician's clothing, jewels, and horses) in the *Flos Medicinae Scholae Salerni*, written in the later Middle Ages (De Renzi, I, 513 ff.; V, 102 f.).

[28] The material on dress, hair, etc., may have been derived from Galen's *Commentary on Hippocrates' Epidemics* (Kühn edition, XVII, part II, 149 ff.).

ailments are likely to hurl evil words at physicians; these should be ignored for they are not deliberate but rather a result of the harsh annoyance suffered by the patient.

[Etiquette with regard to Women Patients]

Such [as the following] constituted the sacred medical oath according to the precepts of Hippocrates.[29] Enter a home without injuring or corrupting it. Beware lest your medicines bring death to anyone. Do not allow women to persuade you to give abortives, and do not be a part to any such counsel, but keep yourself immaculate and sacred.[30] Abstain from fornication, from [relations with] maidservants, children, married women, and virgins or widows. Keep secret whatever you hear or see in the course of healing, or otherwise, unless it be something that ought to be reported or judged.

[The Taking of the Pulse]

L(a). [continuation of treatise L above]. When a female lies before you and you are about to take her pulse, look neither at the top of her head nor at the bottom of her feet, but at the hand you are holding. By taking the pulse you determine the inner ailment. Learn how to take the pulse so that you can do it standing or seated. Sit on a stool that is neither too high nor too low, but so adjusted that you can take the pulse. If you are holding the right hand below the wrist with your right hand, let the fingers be uppermost so that your thumb may be in the middle in a position outside [i.e., the outer side of the wrist]. Moreover let two fingers, namely the index and middle finger, be placed together inside on the upper part of the vein [venae].[31] Hold the pulse for a long time so that you may detect the up and down

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[29] Of the five manuscripts that contain this treatise (St. Gall 751, Copenhagen 1653, Bamberg L III 8, Zurich C 128/32, and Brussels 1342-50) the last mentioned has, in addition to the name Hippocrates, those of Apollo and Aesculapius. The reference to the Hippocratic Oath and "precepts" is noteworthy. Contrast this with the false citations from the Oath in Jerome's letter (above, treatise A), and the vague references to an oath in treatises C and I. It is obvious from the references to the Oath in treatises G, J and K (appearing in manuscripts dating from the ninth to the twelfth centuries) that the Oath was known in the early Middle Ages. It may be that it was known at second hand since it is not found in any of the medical manuscripts of this period. The earliest manuscript version cited by Diels is from the thirteenth century. R. Cantarella's "Una Tradizione Ippocratica nella Scuola Salernitana: Il Giuramento de' Medici" (*Archeion*, 1933, 15, 305 ff.) cites references to the Oath in the thirteenth-century regulations of Frederick II and infers that there was an uninterrupted tradition through the earlier centuries, but presents no definite evidence thereof.

[30] The Zurich mansucript has, immediately after "Sacred," the phrase "a custodian of the faith." The Brussels manuscript is fragmentary.

[31] Here apparently "vena" means artery; "arteria" is used in treatise M, below This somewhat incoherent passage on the position of the fingers, etc., defies complete clarification. In the effort to make sense out of it I followed several helpful suggestions from William Jerome Wilson of the Cleveland Branch of the Army Medical Library. It is my intention eventually to publish an article on the mechanics of pulse taking, with numerous quotations from Medieval texts and with several illustrations from Medieval manuscripts. Usually, it seems, the four fingers were placed on the inner (palm) side of the wrist to register the pulse beat.

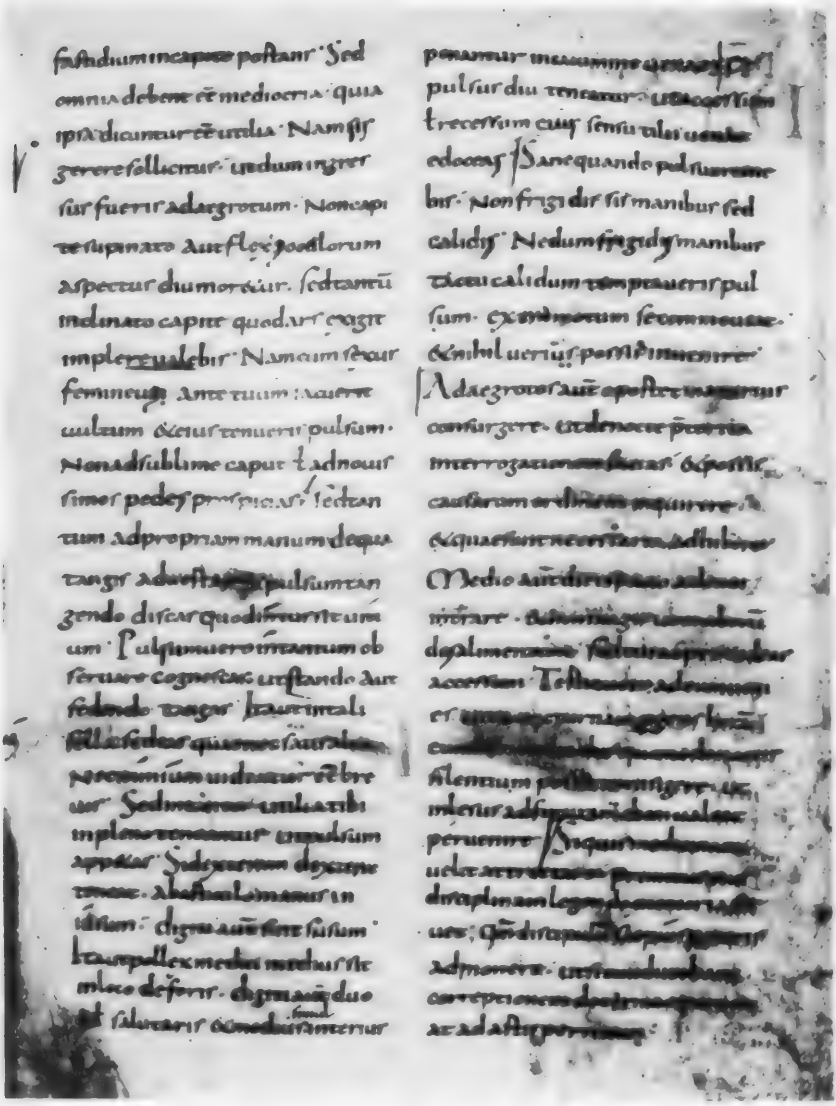

FIG. 3

Paris, Bibliothèque Nationale, MS 11219, 9th century, folio 13r.

Text of treatise L(a), "On taking a Woman's Pulse" (continuation of treatise L).

beat by the feeling of the vein. By all means when taking the pulse have your hands warm rather than cold, lest the touch of cold hands upset the warm pulse and make it impossible to determine the true condition.[32] [to be continued below as treatise L(b), concerning sick calls].

The foregoing passage on pulse taking has an almost contemporary parallel in the introduction to a treatise "Concerning the Pulse" (*Peri Sfigmon*) attributed to Soranus. It is found in the tenth-century portion of a manuscript which was written at about the year 900 in the Swiss monastery of Reichenau (it is now at Karlsruhe, MS 120).[33]

M. CONCERNING THE PULSE. Soranus, to his most loved son, greeting. There are many who do not know how long they ought to hold the hand of a patient, and mistakenly think that they have made a true examination. Therefore I urge you, most loved son, to learn early the following method of inspection so that you will never be mistaken. When you visit a patient you should seat yourself in such a position that you may easily see his face, that is, on a stool near the foot of the bed, facing him. In case you are visiting a frenetic patient who would be excited by your facing him, sit near the head whence you can easily see him without being seen. Moreover, if you sit on the bed [do so with a mind to] the conditions of his health, for a slight movement of the person seated there may provoke worse ills, such as a flow of blood or a pernicious reaction or an abundance of sweating or some upset which by lessening in any way the helpfulness of quiet, just that much endangers health by promoting trouble.

Therefore, if this is your first inspection, when you sit down you ought to ask what the bodily affliction is, and how long it has lasted. If it is not your first visit, omit these matters and inquire as to any new ills. Ask if he is sleeping, and

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[32] A condensed, and apparently garbled, version of the section on pulse taking appears in St. Gall MS 751 and Escorial a IV 6 (edited by Hirschfeld, p. 363). The Paris text and the Karlsruhe treatise (below, treatise M) constitute the most detailed account of the subject that I know of in early Medieval literature. The later Salernitan treatise (below, treatise P) is briefer, and has no additional items. As to the Classical sources for the material, Galen's numerous pulse treatises (Kühn edition, vols. VIII-IX and XIX; especially VIII, 803 ff.) contain no passages exactly like those from the early Middle Ages. It is possible that the Medieval material was taken from the corpus of pulse lore that was transmitted from Classical times to the later Middle Ages under the names of Theophilus, Joannes Philoponos, Meletius, Actuarius and Philaretus (see Temkin's article cited above in note 1, especially p. 54 ff.; also A. Hesse, *Ein Pulstraktat . . .*, Leipzig, 1922).

[33] The text was edited by Rose (*op. cit.*, II, 275 ff.) from A. Torinus' edition in *De Re Medica* (Basel, 1528) and Karlsruhe MS 120. Diels (*op. cit.*, II, 94) cites the Karlsruhe MS and also Chartres MS 62. As a matter of fact the Chartres MS contains only the first few lines of the treatise, after which the text shifts to another pseudo-Soranic treatise which ends with the misleading explicit, *Explicit Peri Sfigmon Ysagogus.* With the exception of the first few lines of *Peri Sfigmon*, this text is the *Ysagogus* or *Horus Ysagoge* mentioned above in note 14; in Thorndike and Kibre's *Incipits* it is listed as *Morus Ysago.*

how often and how much; also if bowels and bladder are functioning normally. After this questioning pause a little, lest the patient has been terrified through timidity or awe at the presence of the physician, or lest he has been upset by his suffering or wakened from sleep. [Give him an opportunity] to compose himself; you might take time for repose by walking about. Then prepare your hand for the pulse taking. Have it moderately warm so that nothing in the hand itself will mislead you; not too warm, not too cold, not sweaty. Such conditions prevail if the hands have been warmed at a fire or heated vessel, or in hot water. It is better to prepare the hands by friction or by placing them next to the chest and under the armpits.

Know which hand to hold; if the patient is lying down, the right hand is better for inspection, or the hand closer to the physician. But it should be on the patient's upper side since the weight of the body from above, pressing on the part underneath, is likely to dominate a normal pulse. Hold the patient's hand with three or four fingers in contact with the artery (*arteria*); with the tips of the fingers press down lightly holding the hand immobile so as to detect the strength, order, and every difference in the movement of the pulse. [treatise continues with a discussion of various types of pulses].

[Sick Calls]

L(a). [continuation of treatise L(a), above]. For those who are ill, you ought to get up early so as to inquire about the preceding night, finding out the order of the causes [of the ailment] and the necessary treatment. At midday pay another visit, not so much to see about the patient's food as to plan for the beginning of a cure. For a third time, visit at about nightfall, staying for an hour in order to make arrangements for him to pass the night [comfortably] so as to be fortified to meet the next day unimpaired. . . . [Treatise ends with an unrelated postscript concerning the study of medicine; apparently it belongs with the succeeding letter: see above, note 19.]

We conclude our series of translations with four treatises, of which the last three are outstandingly practical, being concerned with the bedside manner in particular, and in general with those practices that might be called "tricks of the trade." Although traceable to the age of monastic medicine, these practices seem to have been derived originally from the later Hippocratic treatises, such as *Decorum* and *Precepts*.[34] Apparently it was the late and declining age of Greek medicine that stressed such superficial aspects of medical practice. It is noteworthy that it also was the late, but not declining, age of Medieval medicine that stressed these same factors, which had been known but neglected during the age of monastic medicine. Suffice it to say that this type of late Classical (and also late Medieval) etiquette is distinctly secular in character. In fact,

[34] It seems likely that there were Latin translations of these works as early as the fifth and sixth centuries, and presumably there were copies in the ninth and tenth centuries. I have, however, found no evidence of extant manuscripts in any European collections.

it has a distinctly modern flavor, even though it came out of a declining classicism and was nurtured by a "dark age" of ascetic piety. It is also significant that, when the monastic compilers of these late treatises cited authorities, they were Christian rather than Classical. At the same time there is evident a broader, more detailed and increasingly secular expression of the early medieval ethics and etiquette. The last two treatises (from the twelfth century) exemplify the final transition from monastic to Salernitan domination.

The first of the four treatises is so brief and condensed that it might have constituted a code for medieval physicians. It is a noteworthy synthesis of Christian and Hippocratic ideals, despite the fact that the sole authority invoked is the God of Christianity. The treatise seems to have been popular; it appears in at least eleven manuscripts, dating from as early as the ninth, and as late as the fifteenth, century.[35]

N. [Epistle of Hippocrates. Epistle of Galen].[36]

Meanwhile I warn you, Physician, even as I was warned by my master. You ought always to read, and to shun indolence. Visit with care those whom you accept for treatment, and safeguard them. (Hold fast to the cures that you know. Never become involved knowingly with any who are about to die or who are incurable. Do not take up with the daughter or wife of your patient).[37] Cherish modesty, follow chastity, guard the secrets of the homes [you visit]. If you know anything derogatory concerning a patient, keep quiet about it. Do not detract from other [physicians]; if you praise the character and cures of others you yourself will have a better reputation. (At the outset, accept at least half of the

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[35] Paris BN 11219, Brussels 3701-15, Glasgow Hunter V, 3. 2, Zurich C 128/32, Rome Angelica 1502, Rome Vat. Regina 1443, Rome Vat. 2376, and 2417 (according to Diels, *op. cit.*, I, 123), Carpentras 318, Paris BN 15456, and Paris BN 6988A. In the textual analysis of certain manuscripts of this treatise, and also in the translation, I am indebted to my colleague Professor B. L. Ullman for generous assistance.

[36] Although four of the eleven manuscripts have no author caption, the treatise is attributed to Hippocrates in three (Brussels 3701-15, Rome Vat. Regina 1443, and Paris BN 6988A) and to Galen in three (Paris BN 15456, Rome Vat. 2376 and 2417). The attribution to Isidore of Seville by Hirschfeld (p. 361), Sigerist (p. 32) and Thorndike-Kibre (*Catalogue of Incipits*, under "Interea") is doubtless due to the fact that in Rome Angelica MS 1502 the treatise is preceeded by "*Incipit Liber Ysidori.*" This caption is incorrect both for this treatise and for those that follow it (see Wlaschky's edition in *Kyklos*, 1928, 1, 103 ff.). In BN MS 15456 the treatise begins as follows: "I urge you, O Physician, and with exhortation I warn, and with warning I enjoin you even as I was warned. . . ."

[37] Neither of the passages in parentheses occurs in the pre-eleventh-century manuscripts, excepting the second passage (concerning fees), which is in the tenth-century, South-Italian, version from the Glasgow MS. Was this brutally practical factor in medieval medical ethics Salerno's first contribution to the de-spiritualization of "the Art"?

remuneration without hesitation, for he who wishes to buy [your services] is disposed to pay and to beg [for treatment]. Get it while he is suffering, for when the pain ceases, your services also cease).[37] You will win more thanks if you do all these things, and no physician will be greater than you [in reputation]. Read felicitously, be progressive, fare well, and God's grace be with you, in the practice of medicine and [your other] undertakings. Let healing come from God, who alone is the physician. Amen.[38]

Of a more practical trend is the second treatise, which is concerned solely with the bedside manner. It occurs in at least five manuscripts, dating from as early as the tenth, and as late as the fifteenth, century.[39] It is our only treatise on medical ethics and etiquette that appears earliest in a South-Italian manuscript from the Salernitan region.

O. In What Manner You Should Visit a Patient.

You do not visit every patient in the same manner. If you wish to learn all, heed [the following]. As soon as you approach the patient ask him if he has any pain. If he says he has, then ask if the pain is severe and constant. After this take his pulse and see if he has fever. If he is in pain you will find the pulse rapid and fluid. Ask if the pain comes when he is cold; also if he is wakeful, and if his bowels and urine are normal. Inspect both parts and see if there is perchance any serious danger. If the ailment is acute inquire as to the beginning of the illness. If it is chronic you will not recognize it at all, for the beginning of such illness is at a time when the patient begins to feel a lesion when performing accustomed functions, as if he could not perform them. After this ask what former physicians said when they visited him, whether all of them said the same. Inquire concerning the condition of the body, whether it is cold or otherwise, whether the bowels are loose, sleep interrupted, the ailment constant, and if he has ever had such ailments before. Having made these inquiries you will easily recognize the causes of the illness and the cure will not be difficult.[40]

Our third treatise comprises a twelfth-century text from a famous Salernitan manuscript (Breslau 1302),[41] and its fourteenth-century amplification attributed to a certain Archimathaeus (ca. 1100 ?). In De Renzi's edition (*op. cit.*, II, 35) the treatise was lauded for its uniqueness among medieval treatises on the relations of physician and patient.

[37] Carpentras MS 318 has a more pious ending: "Amen, and He lives and reigns and rules through eternity."

[39] Monte Cassino 97, Montpellier 185, Rome Vat. Barberini 160, Carpentras 318, and Paris BN 6988A. The text is found in De Renzi, II, 73; Neuburger, *op. cit.*, II, pt. I, 257; and Sigerist, p. 31 f.

[40] The Carpentras manuscript has a slightly different ending.

[41] Concerning this manuscript, see De Renzi, II, 74 ff.; Sudhoff, "Die Salernitaner Handschrift in Breslau" (*Archiv Gesch. Med.*, 1920, 12, 101 ff.); and Henschel, "Die Salernitanische Handschrift" (*Janus*, 1846, 1, 40 ff.).

Factual evidences, such as the pre-Salernitan treatises already quoted, indicate that it was merely a link, though an important one, in the development of medieval medical ethics and etiquette. It is clear that this treatise in particular, and Salerno in general, mark neither the beginning nor the revival of highmindedness and intelligence in medical practice. They do illustrate the late-medieval shift of emphasis from ideals to practical considerations.

The Salernitan treatise repeats some of the early medieval idealism that stemmed from both Christian and Classical sources; notably the invoking of God's aid and the Hippocratic warning against immorality. But the treatise is more concerned with a hitherto unimportant factor, the materialistic side of medical practice. Even though it treats of the age old topics, it treats them in a spirit of unrestrained ambition and selfcentered individualism. For the most part, professional cleverness overshadows Hippocratic and Christian idealism. This new secular emphasis, often designated nowadays as modern-mindedness, did not originate at Salerno. It evolved out of earlier practices, during the late-medieval era of rapid urbanization. It was widely prevalent in Italy and elsewhere, meeting with the approval of leaders in the profession: Arnold of Villanova, Henry of Mondeville, Guy of Chauliac, Albert of Bologna, Jan Yperman, and John Arderne.[42] This trend might be said to mark the despiritualization of the medieval physician.

Inasmuch as the Salernitan treatise has appeared in English translations that are readily available,[43] we present the subject matter thereof in condensed form with a few quoted excerpts that are of unusual significance.[44]

P. Concerning the Physician's Approach to the Patient.

Therefore, O physician, when you call on a patient, be a helper in God's name. Let the angel who accompanied Tobias [Tobias 3:25. Vulgate] be your spiritual and physical companion. On entering the home try to find out through the messenger [from the household] how sick the patient is and what sort of an ailment he has. This is necessary so that you will not seem to be entirely ignorant of the ailment when you approach him. . . . [Detailed instructions follow: e. g., ask whether

[42] Excerpts from the works of these men (quoted in Miss Welborn's article cited above in note 1) show a marked resemblance to the Salernitan treatise (P, below), which in turn resembles treatises L, M, N, and O (above).

[43] Francis Packard, in *The School of Salernum* (New York, 1920) p. 18 ff.; and George Corner, in "The Rise of Medicine at Salerno," (*Annals Medical Hist.*, 1931, 3, 14 f.).

[44] The text is in De Renzi, II, 74 ff.

the patient has confessed to a priest; pretend that the case is serious; thus, whether he survives or dies, your reputation is safe; in the sick room greet those present and pay compliments concerning the household before turning to the patient]. Make him feel secure and quiet his spirit before you take the pulse. Take care lest he lie on his side or have his fingers over-extended or drawn back into his palm. Support his arm with your left [hand] and consider the pulse beat at least to a hundred. Also take note of the different kinds of pulses. . . . [Inspect the urine for color, subtance, and quantity; on leaving tell the patient that he will get well but tell the servants that he is very sick; do not look with lecherous eyes on women of the household; if invited to dine, do not be officious or overly fastidious; during the meal, enquire about the patient; on leaving, show your appreciation; etc., followed by advice concerning diet, cupping, digestion, etc.; on later visits during the patient's convalescence, the physician is advised to be cheerful and to promise the patient a speedy recovery. Finally] with as much as possible of honest promises go in peace, Christ your guide.

The expanded version of the Salernitan treatise appears in a fourteenth-century manuscript (Paris BN MS Lat. 7091). The final paragraph serves as an excellent expression of the increasingly secular and materialistic spirit of late Medieval medical practice. This tendency, which is seldom emphasized by those optimistic modern commentators who sing the praises of Salernitan medicine, was marked by a strong emphasis on the importance of good public relations. The following quotation (with which the treatise ends) seems very modern, and somewhat reprehensible, by reason of the clever psychological approach, with its hint that the physician should assume a hypocritically cheerful attitude in the interests not only of the patient's health, but also of his own purse.[45]

[It is advised that the convalescing patient be encouraged by having congenial friends visit him; boy-friends for young convalescents, old man for senile patients, and for noblemen, friends who will chat concerning dogs, horses, and falcons. The physician himself, when he calls, should enter the room] with a hilarious countenance and a joyful voice saying: "Hey there, what do you say? What sort of fun are you having?" . . . With such words the patient is encouraged. Finally, accept your remuneration graciously. and with a full purse and with joy and delight for one and all (if that be possible), by their leave go in peace.

Explicit. Book of Instruction for the Physician, according to Alquimathaeus [i. e., Archimathaeus].

In all fairness to the Salernitans, it should be noted that they also had treatises expressing the higher ideals of the profession. This is exemplified in our last treatise, taken from a work attributed to Constantine the African who lived and wrote at about 1100. In late Medieval

[45] The text is in De Renzi, V, 348 f.; see also I, 513 and V, 102 for verses from the *Flos Medicinae Scholae Salerni* concerning fees, dress, etc.

manuscripts (of the thirteenth and fourteenth centuries) and in early printed editions (the 1515 Lyons edition of Isaac contains the earliest version), the treatise appears as the prologue to Book I of Constantine's *Liber Pantegni*; Theorica, De Communibus Medico Cognitu Necessariis Locis. I know of no manuscript prior to the thirteenth century, but it is possible that the treatise was compiled by Constantine at about 1100 from Arabic material or from works such as we have noted in the early medieval compilations. At any rate it resembles treatises G and N, quoted above, and appears to be a synthesis of materials long in circulation and originally derived in large measure from Hippocratic sources such as the Oath.

Q. What Sort of Person a Student of Medicine Should Be.[46]

He who wishes to obtain the mantle of medicine ought [so to act] that he is an honor to his master, is praised [by him] and is subject to him just as to his own parents. . . . The master should be honored so that [his disciples] may learn how to handle difficult situations. Whomsoever the master takes for instruction should see to it that he is a worthy disciple. He should teach [only] worthy disciples, without pay or expectation of future emolument; and he should be sure to keep unworthy persons from entering this learned profession. The physician should work for the healing of the sick. He should not heal for the sake of gain, nor give more consideration to the wealthy than to the poor, or to the noble than the ignoble. He should neither teach, nor aquiesce in teaching anyone how to give a harmful potion, lest some ignorant person should hear of it and on his authority mix a death potion. He should not teach anyone to bring about abortion. Moreover, when he visits patients, he should not set his heart on the patient's wife, maidservant, or daughter; they blind the heart of man. He ought to keep to himself confidential information concerning the ailment, for at times the patient makes known to the physician things that he would blush to tell his parents. The physician should flee luxury and avoid worldly pleasures and drunkenness. These things upset the spirit and encourage the vices of the flesh. He should devote himself with assiduous zeal to the healing of the body and should not neglect reading, so that his memory may aid him when books are not at hand. He should never refuse to visit the sick for thus, by experience, he may become more efficient. He should be pious, humble, gentle, likeable, and should seek divine assistance. [In chapter 2 the author discusses "Six Things which it is Well to Know," among them dialectic and "the entire quadrivium." Incidentally it is suggested that the author's book "is useful above all others."].

[46] The text in Migne *Patrologia Latina*, vol. 150, 1563, is similar to the sixteenth-century versions.

CONCLUSIONS

In summarizing the possible sources of the above examples of medical ethics and etiquette, we note that many of them bear a marked resemblance to the dicta in certain Hippocratic writings.[47] Neither in Greek nor in medieval times, however, did these dicta constitute an enforced code of conduct; they were merely a set of ideals which the high minded physician was urged to follow. Jones' remarks in the introduction to his translation of the Hippocratic *Law*, to the effect that Greek physicians were subject to neither legal penalties nor a universal guild organization, could be applied equally to medical practice in the Early Middle Ages. The only hint of legal controls is found in the above mentioned Visigothic Spanish laws concerning women patients (treatise B) and in the form letter for the instruction of the governmentally supervised physicians in Ostrogothic Italy (treatise C).

Our second conclusion is that both Greek and Medieval physicians were subjected to two somewhat divergent influences, one of which was idealistic, the other practical; in other words, ethics and etiquette. So far as ethics are concerned, the early Medieval writers seem to have combined Hippocratic and Christian ideals without any apparent feeling of conflict or inconsistency. They repeated much of the ideology of the Hippocratic Oath, notably the moral injunctions against giving poisons or abortives, and against violating the patient's confidence or the virtue of his womenfolk.[48] The Medieval exhortation that the physician keep himself "immaculate and sacred" (treatise K[a]), may be a reflection of the "pure and holy" clause of the Hippocratic Oath. Furthermore, the array of virtues recommended for members of the medieval medical profession (especially in treatises F, G. H and K) reads much like the standard set for Greek physicians in the Hippocratic works concerning the *Physician* (Chapter I) and *Decorum* (Chapter V; also III, VII and

[47] See W. H. S. Jones, "Greek Medical Etiquette (*Royal Soc. Med., Proc.*, 1922-23, 16, Hist. pp. 11-17); *The Doctor's Oath* (Cambridge University, 1924); and the introductory essays in his *Hippocrates*, II, pp. xxxiii ff. and 257 ff., also I, 295 where he describes travesties of medical ethics such as the practice of abortion (described in *Nature of the Child*), which was a startling contrast to the anti-abortion pledge of the Oath. See also Edelstein *The Hippocratic Oath*, p. 63.

[48] These ideals, plus those from the *Decorum* and *Precepts* concerning fee collecting, were widely prevalent in Ancient and Medieval times. Exigencies of space prevent our citation of the extensive modern literature on Hippocratic ideals among Medieval Jewish physicians, the Arabs, and in China, etc.

XII).[49] In like fashion the Medieval analogy concerning seed planting and medical education (treatise J) is similar to chapter III of the Hippocratic *Law*. The importance of starting medical education early in life is found in both Ancient and Medieval works (treatises H and K, and note 24). One factor not found in Hippocratic writings is the Medieval emphasis on a broad background of liberal-arts education (treatises I, K, L, and Q).

Turning to the realm of everyday medical etiquette, one finds even more noteworthy parallels between the Hippocratic and the Medieval writings; for example, (1) admonitions for the physician to avoid the use of wine to excess (compare treatises F, L, and Q with Hippocratic *Decorum*, chap. XV), (2) to avoid excessive use of ointments (compare treatise K[a] with *Precepts*, chap. X and *Physician*, chap. I) and (3) to avoid ostentation in dress and manners (compare treatises G, L and K[a] with *Precepts*, chap. X and *Decorum*, chap. II-III, VII); also (4) the bedside manner, especially the exercise of patience with difficult patients (compare treatise K[a] with *Decorum*, chap. XII), (5) the withholding of information from the patient (compare treatises C and P with *Decorum*, chap. XVI), and (6) restraint in pressing for payment of fees (compare treatises N and P with *Decorum*, chap. II and *Precepts*, chap. IV).[50] Finally, (7) in both literatures there is evidence of the contrast between the high ideals of physicians for their own profession (compare treatises A, C ff. with *Decorum*, chaps. V-VI, XVIII) and its low moral repute among the general public (compare treatises B, J and K[a] with *Art*, chaps. I, IV-V; *Law*, chap. I; and *Decorum*, chaps. II, VII). It seems that the inefficiency and waywardness of medical practitioners has been condemned by lay critics in all ages.[51]

Perhaps the chief surprise that comes to the student of early Medieval medical manuscripts is the rarity of instances of that pious other-worldly spirit which is supposed to have hung like a cloud over the Middle Ages. To be sure this spirit is the dominant element in two of our seventeen treatises (D and E), and in two others (A and N) it is combined with an approximately equal amount of classical or contemporary pragmatism.

[49] The Hippocratic works cited here and in the succeeding sentences are found in Jones, *Hippocrates*, vol. II, except for *Precepts*, which is in vol. I.

[50] With regard to fees, medieval writers, especially in the later centuries, recommended more drastic measures than those found in Greek writings. See the articles by Welborn and Sigerist, cited above in note 1; also Diepgen's chapter (IV) on the subject.

[51] This can be seen in the works of Pliny the Elder, Seneca, Sidonius, John of Salisbury, Petrarch, and Molière.

In most of the treatises, however (to be specific, in thirteen out of seventeen), it is almost completely eclipsed by the viewpoints of secular medicine.

Our explanation of this paradox is the obvious fact that "everybody who talks about Heaven" is not intent on it at all times. Medieval *religious* literature to the contrary notwithstanding, during the Middle Ages most people lived in *this* world. The public utterances of the monastic writers who monopolized early Medieval literature were likely to be piously religious when concerned with ideals; though in writing of *medical* ideals they often used Hippocratic substitutes. Practical activities, medical or otherwise, were discussed in a more earthly manner. Thus it is that, whereas the treatises on medical *ethics* often manifest a highly Christian ideology, those on *etiquette* are more secular. When one passes from the era of our survey to the later Medieval centuries, he finds still less of otherworldliness and more of those characteristics which seem to be widely prevalent among medical men of all civilized ages.

It might be enlightening for modern folk to think of the early Middle Ages in somewhat the same perspective in which we think of our primitive and rather pious pioneer ancestors of frontier days. The otherworldly utterances of their preachers reflect only one aspect of their civilization. Their medical practices, like other aspects of their everyday lives, were highly practical and secular. So it was in the early Middle Ages. The progressive, secular trend that is exemplified in the Salernitan treatises evolved out of the monastic-Hippocratic environment of the preceding centuries,[52] long before Salerno's rise to prominence in the twelfth century. This trend is to be attributed, not to an Italian Renaissance of Hippocratic classicism, but to the Christian "Hippokratismus" which persisted through the disintegration of the Western Empire and the early Middle Ages, then expanded as the gradual secularization of Medieval life, under the influence of industry, commerce, and other phases of urban civilization, turned men's minds more and more to this-worldly affairs.

[52] A noteworthy point in the transmission of Hippocratic ethics and etiquette to the monastic West is the lack of Galenic influence. Galen's commentaries on various Hippocratic works existed in early Medieval Latin versions, but (as has been indicated above in several footnotes) the Medieval texts on ethics and etiquette seldom show as close relationships to Galenic works as they do to late Hippocratic treatises such as the *Oath, Decorum,* etc.

APPENDIX

THE HIPPOCRATIC OATH (Fourth-Century B. C.).[58]

I swear by Apollo Physician and Asclepius and Hygieia and Panaceia and all the gods and godesses, making them my witnesses, that I will fulfil according to my ability and judgment this oath and this covenant:

To hold him who has taught me this art as equal to my parents and to live my life in partnership with him, and if he is in need of money to give him a share of mine, and to regard his offspring as equal to my brothers in male lineage and to teach them this art—if they desire to learn it—without fee and covenant; to give a share of precepts and oral instruction and all other learning to my sons and to the sons of him who has instructed me and to pupils who have signed the covenant and have taken an oath according to the medical law, but to no one else.

I will apply dietetic measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice.

I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy. In purity and holiness I will guard my life and my art.

I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work.

Whatever houses I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice, of all mischief and in particular of sexual relations with both female and male persons, be they free or slaves.

What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account one must spread abroad, I will keep to myself holding such things shameful to be spoken about.

If I fulfil this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot.

[58] The following translation is reprinted from Ludwig Edelstein, *The Hippocratic Oath*, Baltimore, 1943, p. 3.

POLITICAL ORDER AND HUMAN HEALTH IN JEFFERSONIAN THOUGHT *

GEORGE ROSEN

The significance of health as a question of public policy was recognized and appreciated in eighteenth century Europe and America. Owing to varying political, economic, and social considerations, this awareness did not manifest itself everywhere to the same degree or in the same form. For example, it appeared most sharply in the concept of medical police, formulated within the framework of German absolutism and mercantilism. While there was no comparable systematic formulation of French and British thought and action on the question of social policy in relation to problems of health, it is possible to trace the various elements involved so as to have an ordered view of their origin and development.[1]

Here I shall deal with a related subject, that is, Jeffersonian views on the relations between political and social organization and states of health. As applied here, the term Jeffersonian is not limited to the views of Thomas Jefferson. It is used rather to describe the ideas of a group of men who were associated with Jefferson politically, scientifically, or socially, and who in varying degree shared his views. Among them may be mentioned Thomas Paine, Benjamin Rush, Joel Barlow, David Rittenhouse, and in his earlier years, Thomas Cooper. For the most part, however, this analysis will deal with Jefferson and Rush, as their thought offers the most sharply formulated views on the reciprocal relations of social and physical health.

Neither Jefferson nor Rush ever developed any systematic theory of the social relations of health. Nonetheless, their scattered ideas can be pieced together from a variety of sources to form a coherent whole. Jefferson's correspondence is the main source for his views, while Rush expressed his ideas throughout his numerous essays and books, as well as in his Commonplace Book. In considerable measure, the ideas of Jefferson, Rush, and the kindred spirits associated with them were not original, and in many instances were consciously borrowed to fill some immediate need.

* Read at the twenty-fourth annual meeting of the American Association of the History of Medicine, Baltimore, May 3, 1951.

[1] George Rosen: *The Idea of Social Medicine* (Chap. I, Mercantilism, Absolutism and Medical Police; II. Health and Social Policy in Britain and France from the Seventeenth Century to the End of the Ancien Régime) (unpublished manuscript).

This very fact, however, provided a definite frame of reference within which to operate, for they were immersed in the intellectual climate of the Enlightenment and therefore confidently adopted and applied certain clusters of ideas and patterns of thought very generally accepted as self-evident.

Design, Nature, Natural Law, Reason, and Happiness were key concepts in the thinking of the Enlightenment, and are employed with unhesitating regularity in Jeffersonian thought. It was accepted as a basic premise that the world had been established by the Creator according to a definite plan, within which there were ordered ways of behaving. These ordered ways were the laws of nature, which redounded to the glory of the Creator and the greater good of man. "What is natural law?" asked Volney. And in answer to his question replied that "It is the regular and constant order of events, by which God rules the universe." It followed ineluctably, therefore, that human nature and human institutions were subject to and resulted from the operation of these laws. Montesquieu pointed out that "Man is born in society and there he remains"; and Adam Ferguson echoed this in his comment: "If we are asked, therefore, where the state of nature is to be found? We may answer, it is here."

Underlying Jeffersonian political theory are these views, as well as the corollary, that the biological, social, psychological, and moral relations of man to his environment were so interlocked that they were all one. Indeed, the Creator had so designed the human body that it would flourish when it lived in harmony with its political and social environment, and conversely He had so framed the political order that human health was fostered by good social institutions. Both Jefferson and Rush are quite explicit on this point.

In his *Inquiry into the Natural History of Medicine among the Indians of North America*, which was read before the American Philosophical Society in 1774, Rush observed that disease, political institutions and economic organization were so interrelated that any general social change produced accompanying changes in health.

> The leprosy, elephantiasis, scurvy and venereal disease, appear to be different modifications of the same primary disorder. The same causes produce them in every age and country. They are diversified like plants by climate and nourishment. They all spring originally from a moist atmosphere and unwholesome diet; hence we read of their prevailing so much in the middle centuries, when the principal parts of Europe were overflowed with water, and the inhabitants lived entirely on fish and a few unwholesome vegetables. The abolition of the feudal system in

Europe, by introducing freedom, introduced at the same time agriculture; which by multiplying the fruits of the earth, lessened the consumption of animal food, and thus put a stop to these disorders. The elephantiasis is almost unknown in Europe. The leprosy is confined chiefly to the low countries of Africa. The plica polonica once so common in Poland, is to be found only in books of medicine. The small pox is no longer a fatal disorder, when the body is prepared for its reception by a vegetable regimen. Even the plague itself is losing its sting. It is hardly dreaded at this time in Turkey; and its very existence is preserved there by the doctrine of fatalism, which prevails among the inhabitants of that country. It may serve as a new and powerful motive against political slavery to observe, that it is connected with those diseases which most deform and debase the human body. It may likewise serve to enhance the blessings of liberty, to trace its effects, in eradicating such loathsome and destructive disorders.[2]

Despite its obvious historical and medical inadequacies, this passage has been quoted at length because it demonstrates explicitly the central Jeffersonian view of the connection betwen physical and social well-being. Nor is this an isolated instance. Later in the same essay, discussing the relation of health and civilization Rush observed that the complete enjoyment of health is as compatible with civilization, as the enjoyment of civil liberty.

We read of countries rich in everything that can form national happiness and national grandeur, the diseases of which are nearly as few and simple as those of the Indians. We hear of no diseases among the Jews, while they were under their democratical form of government, except such as were inflicted by a supernatural power. . . . The Empire of China, it is said, contains more inhabitants than the whole of Europe. The political institutions of that country have exempted its inhabitants from a large share of the diseases of other civilized nations. . . . But it is unnecessary to appeal to ancient or remote nations to prove, that health is not incompatible with civilization. The inhabitants of many parts of New England, particularly the province of Connecticut are strangers to artificial diseases.[3]

Twenty-five years later, in 1799, Rush published *Three Lectures on Animal Life* in which he reiterated his observations.

In no part of the human species is animal life in a more perfect state than in the inhabitants of Great Britain, and the United States of America. With all the natural stimuli that have been mentioned, they are constantly under the invigorating influence of liberty. There is an indissoluble union between moral, political and physical happiness; and if it be true, that elective and representative governments

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[2] Benjamin Rush: An Inquiry into the Natural History of Medicine among the Indians of North America, and a comparative view of their diseases and remedies with those of civilized nations, *Medical Inquiries and Observations* . . . (second American edition). Philadelphia, Thomas Dobson, 1794, pp. 24-25.

[3] *Ibid.*, pp. 67-69.

are most favourable to individual as well as national prosperity, it follows of course, that they are most favourable to animal life. . . . Many facts prove, animal life to exist in a larger quantity and for a longer time, in the enlightened and happy state of Connecticut, in which republican liberty has existed above one hundred and fifty years, than in any other country upon the surface of the globe.[4]

Associated with or implicit in this central premise are certain logical inferences that the Jeffersonian thinkers did not hestiate to draw. Since the health of the body and the health of society are so intimately and positively related, it seemed an obvious inference that wherever the human species flourished and multiplied, there the political and social order was good and in accord with the laws of nature. The state of the population thus became a diagnostic criterion of a healthy society. According to Rush, " The population of a country is not to be accomplished by rewards and punishments. And it is happy for America, that the universal prevalence of the protestant religion, the checks lately given to negro slavery, the general unwillingness among us to acknowledge the usurpations of primogeniture, the universal practice of inoculation for the smallpox, and the absence of the plague, render the interposition of government for that purpose unnecessary." [5] Only a free and republican government could provide favorable conditions for population growth, while a monarchy which undertook to increase population by artificial means would inevitably fail.

At the same time, just because health and happiness were recognized as positive values, and accepted as symptoms of harmony with the order of nature, the existence of disease and physical disability even in America could not be overlooked. How could the ideas of order and design be reconciled with the individual and social loss resulting from disease and death? How justify the yellow fever epidemic which devastated Philadelphia and other American cities? In essence, this was a problem with which men had wrestled for thousands of years, and which many had attempted to solve. Earlier periods had in the main offered theological answers; the eighteenth century saw it as a problem of philosophy. Alexander Pope in his *Essay on Man* formulated the philosophical reply in its sharpest form.

[4] *The Selected Writings of Benjamin Rush*, edited by Dagobert D. Runes, New York, Philosophical Library, 1947, pp. 167-168.

[5] Rush, *Medical Inquiries and Observations* . . . ,second American edition), Philadelphia, 1794, pp. 74-75.

> All Nature is but Art, unknown to thee;
> All Chance, direction, which thou canst not see;
> All discord, harmony not understood;
> All partial evil, universal Good . . .

This is the Jeffersonian answer to the same crucial problem. Theirs is a reply essentially optimistic, perhaps even with Panglossian overtones.

In a letter to Rush dated September 23, 1800, Jefferson referred to outbreaks of yellow fever in Baltimore, Norfolk, and Providence, and offered this consoling thought. "When great evils happen," he wrote, "I am in the habit of looking out for what good may arise from them as consolations to us, and Providence has in fact so established the order of things, as that most evils are the means of producing some good. The yellow fever will discourage the growth of great cities in our nation, and I view great cities as pestilential to the morals, the health and the liberties of man." [6] On October 1, 1812, in a letter to Colonel William Duane, Jefferson returned to this problem. Discussing his physical condition, he indicated that he was still on the alert for the good which would compensate for the debility of old age. "As a compensation for faculties departed," he wrote, "nature gives me good health, and a perfect resignation to the laws of decay which she has prescribed to all forms and combinations of matter." [7]

Nor did Jefferson change his mind. In a letter to John Adams dated April 8, 1816, he expressed what may be considered his ultimate view of the matter. Measured optimism and a sense of design pervade Jefferson's remarks. While recognizing that happiness is never unalloyed, he still felt that in the long view all was for the best in this world. The justification of disease and pain would eventually come from those who studied this problem, the pathologists.

> I think with you (he wrote to Adams), that it is a good world on the whole; that it has been framed on a principle of benevolence and more pleasure than pain dealt out to us. . . . . There are, I acknowledge, even in the happiest life, some terrible convulsions, heavy set-offs against the opposite page of the account. I have often wondered for what good end the sensations of grief could be intended. All our passions, within proper bounds, have an useful object. And the perfection of the moral character is, not in a stoical apathy, so hypocritically vaunted, and so untruly too, because impossible, but in a just equilibrium of all the passions. I wish the pathologists then would tell us what is the use of grief in the economy, and of what good it is the cause, proximate or remote.[8]

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[6] *The Writings of Thomas Jefferson*, edited by Albert Ellery Bergh, Washington, D. C., 1905, vol. X, p. 173.

[7] *Ibid.*, vol. XIII, p. 187.

[8] *Ibid.*, vol. XIV, p. 467.

Rush shared the view that the creator's plan took both good and evil, health and disease into account. From his experience during epidemics, he concluded that fevers affected chiefly the poor, and consequently that the means to treat such diseases must be cheap and easy to apply. "From the affinity established by the Creator between evil and its antidotes, in other parts of his works," he observed, "I am disposed to believe no remedy will ever be effectual in any general disease, that is not cheap, and that cannot easily be made universal." [9]

This doctrine, that the world is a system which automatically works to produce good, was accepted by the Jeffersonians in association with the thesis of perfectibility. Faith in the growth of an order of peace, happiness, and health made it possible to accept the evils of life and yet remain an optimist. Belief in inevitable progress and perfectibility gives Jeffersonian thought a characteristically buoyant and confident cast. Poetically transfigured, this faith appears in the *Columbiad*, Joel Barlow's epic of the American Enlightenment.

> Sun of the moral world! effulgent source
> Of man's best wisdom and his steadiest force,
> Soul-searching Freedom! here assume thy stand
> And radiate hence to every distant land;
> Point out and prove how all the scenes of strife,
> The shock of states, the impassion'd broils of life,
> Spring from unequal sway; and how they fly
> Before the splendor of thy peaceful eye;
> Unfold at last the genuine social plan,
> The mind's full scope, the dignity of man,
> Bold nature bursting thro her long disguise
> And nations daring to be just and wise.

Clearly, then, government and the principles of political and social organization were matters of fundamental importance in relation to physical and mental health. According to Joseph Priestley, "The great instrument in the hand of divine providence, of this progress of society towards improvement, is *society* and consequently government." [10] To establish a healthy society, it was essential to determine and set up the right kind of government. This approach to the problem brings to light, however, a basic contradiction in Jeffersonian thought which was never resolved. With their faith in the common sense of mankind, the Jeffersonians

[9] Nathan G. Goodman: *Benjamin Rush, Physician and Citizen 1746-1813*, Philadelphia, University of Pennsylvania Press, 1934, p. 208.

[10] Basil Willey: *The Eighteenth Century Background*, London, Chatto and Windus, 1946, p. 195.

believed that free men could be trusted to discover the good society. At the same time, this voluntaristic approach to politics was coupled with determinism. Indeed, Jefferson's analysis of the nature and rôle of political parties was erected upon a basis of biological determinism. Republican theory accepted the origin and existence of political parties as inevitable in any human community. In attempting to account for this phenomenon Jefferson laid great stress on the biological basis of political activity. Indeed, if nothing else were known about Jeffersonian thought, one might be tempted to see in these views a biological theory of politics. Several years before becoming president, in a letter written to James Sullivan in 1779, Jefferson observed that "Where a constitution like ours, wears a mixed aspect of monarchy and republicanism, its citizens will naturally divide into two classes of sentiment, according as their tone of body or mind, their habits, connections and callings, induce them to wish to strengthen either the monarchical or the republican features of the constitution." [11] Similarly, in a letter to John Adams in 1813, Jefferson pointed out that political parties were both biological and social phenomena. In fact, he wrote, "the terms of whig and tory belong to natural as well as to civil history. They denote the temper and constitution of mind of different individuals. . . . To me, then, it appears that there have been differences of opinion and party differences, from the first establishment of governments to the present day, and on the same question which now divides our own country; that these will continue through all future time; that every one takes his side in favor of the many, or of the few, according to his constitution, and the circumstances in which he is placed. . . ." [12]

Inevitably, this point of view calls to mind the Gilbertian verse:

> Now Nature always does contrive . . .
> That every boy and every gal
> That's born into the world alive
> Is either a little Liberal
> Or else a little Conservative!

Nonetheless, this element of biological determinism in Jeffersonian thought must be taken seriously. Obviously, Jefferson was not a rigid biological determinist. He did take account of economic interests and social circumstances, yet these were closely linked with the biological element. Jefferson's thought on this subject was clearly influenced by the French Ideo-

[11] Jefferson, *Writings*, vol. IX, p. 377.
[12] *Ibid.*, vol. XIII, pp. 280, 283.

logists.[13] While visiting France before the Revolution, Jefferson met Cabanis, the leader of this school. When Cabanis published his work on the relations of body and mind in 1892, he sent a copy to Jefferson, who replied on July 12, 1803. How highly he regarded this work and its author is evident from this letter. He wrote:

> I lately received your friendly letter of 28 Vendem. an. II, with the two volumes on the relations between the physical and moral faculties of man. This has ever been a subject of great interest to the inquisitive mind, and it could not have got into better hands for discussion than yours. That thought may be a faculty of our material organization, has been believed in the gross; and though the "modus operandi" of nature, in this, as in most other cases, can never be developed and demonstrated to beings limited as we are, yet I feel confident you will have conducted us as far on the road as we can go, and have lodged us within reconnoitering distance of the citadel itself. . . .[14]

Jefferson was also a friend of Destutt de Tracy, whose commentary on Montesquieu he translated into English, and whose *Treatise on Political Economy* he arranged to have translated. His opinion of both Cabanis and de Tracy is clearly expressed in a letter of July 10, 1812, to Thomas Cooper. Discussing psychology and related topics, Jefferson commented that since "a course of anatomy lays the best foundation for understanding these subjects, Tracy should be preceded by a mature study of the most profound of all human compositions, Cabanis's 'Rapports du physique et du moral de l'homme.'"[15] Jeffersonian thought may thus be considered in part, at least, as an extension of Ideology to the American scene.

This linkage of biological and social organization was applied to a concrete case by Benjamin Rush in his *Account of the Influence of the Military and Political Events of the American Revolution upon the Human Body*.[16] Ostensibly this inquiry was intended to determine how conditions during the Revolution affected its friends or enemies. Actually, the findings were predetermined by Rush's conviction that individual and social health depended on correct political principles.

In general, good health fell to the lot of the patriots. "An uncommon cheerfulness prevailed everywhere among the friends of the Revolution.

[13] For Jefferson's relations with the Ideologic school, see Gilbert Chinard: *Jefferson et les idéologues d'après sa correspondance inédite avec Destutt de Tracy, Cabanis, J. B. Say et Auguste Comte*, Baltimore, Johns Hopkins Press, 1925.

[14] Jefferson, *Writings*, vol. X, p. 404.

[15] *Ibid.*, vol. XIII, p. 177.

[16] Benjamin Rush: *Medical Inquiries and Observations* (second American edition). Philadelphia, Thomas Dobson, 1794, vol. I, pp. 263-278.

Defeats, and even the loss of relations and property, were soon forgotten in the great objects of the war." [17] More specifically, Rush observed among other findings that hysterical women who favored the Revolution were cured of their condition. Furthermore, "marriages were more fruitful than in former years, and . . . a considerable number of unfruitful marriages became fruitful during the war." [18] Finally, many persons who had been sickly were restored to perfect health owing to change of occupation or location as a result of war conditions.

Sharply contrasted with the good health of the patriots was the mental and physical breakdown experienced by the Loyalists. In many instances, they tended to suffer from a hypochondriasis, which was popularly called the "Protection fever" and which Rush termed *Revolutiana*. It was called "protection fever" because it appeared to arise from the excessive concern of the Loyalists for the protection of their persons and possessions. This basic cause was accentuated by such other factors as loss of power and influence, the suspension of the Established Church, changes in manners and diet as a result of inflation, and lastly the legal and extra-legal oppression to which the Loyalists were subjected.

These effects upon the human body were produced through the medium of the mind. Thus the patriots themselves were not necessarily immune to such conditions, and Rush observed that following the peace in 1783, the Americans, unprepared for their new situation, were affected by an excess of liberty.

> The excess of the passion for liberty, inflamed by the successful issue of the war, produced, in many people, opinions and conduct which could not be removed by reason nor restrained by government. For a while, they threatened to render abortive the goodness of heaven to the United States, in delivering them from the evils of slavery and war. The extensive influence which these opinions had upon the understandings, passions and morals of many of the citizens of the United States, constituted a species of insanity, which I shall take the liberty of distinguishing by the name of *Anarchia*.[19]

In short, proper political stimuli, and a stable and ordered society were required for health. Jefferson was of the opinion that excess in society seized upon the mind and produced a kind of mental fever which might become incurable.[20] Mental health implied a society which would provide the proper stimuli and necessary conditions for well-being, and this the Jeffersonians saw in an agricultural economy. In Jefferson's

[17] *Ibid.*, p. 273. [18] *Ibid.*, pp. 273-274. [19] *Ibid.*, p. 277.
[20] Jefferson, *Writings*, vol. VIII, pp. 232, 344, vol. XIV, p. 381.

thinking this attitude was in large measure a result of his aversion for European social and political conditions. In Europe he saw the physical and moral oppression under which the great mass of the people labored. Wherever he looked he saw political injustice, social cruelty, poverty, and disease. By comparison, America was paradise. Jefferson found Europe "Much, very much inferior . . . to the tranquil, permanent felicity with which domestic society in America blesses most of its inhabitants; leaving them to follow steadily those pursuits which health and reason approve, and rendering truly delicious the intervals of those pursuits." [21] Rush concurred in these views, pointing out that "These advantages can only be secured to our country by agriculture. This is the true basis of national health, riches and populousness." [22] Consequently, the chief aim of the Jeffersonian statesman was to prevent the deterioration of agrarian virtue. In this task, he felt himself to be tending the vineyard of the Creator, for "Those who labor in the earth are the chosen people of God, if ever He had a chosen people, whose breasts he has made His peculiar deposit for substantial and genuine virtue." [23]

Urbanization and industrialization were to be avoided as far as possible if the United States was to remain an agricultural society. To the Jeffersonians urban civilization went hand in hand with poverty, disease, luxury, dissipation, political inequality, and social injustice. Jefferson agreed that cities "nourish some of the elegant arts," but insisted "the useful ones can thrive elsewhere, and less perfection in the others, with more health, virtue and freedom, would be my choice." [24] To Jefferson, cities meant an urban proletariat and this he rejected vigorously. In his opinion, "The mobs of great cities add just so much to the support of pure government, as sores do to the strength of the human body." [25] A letter to the economist Jean Baptiste Say, presents Jefferson's distrust of manufactures and cities in more measured tones. Discussing the question, Should the United States devote herself exclusively to agriculture?, he comments that in solving this problem, "we should allow its just weight to the moral and physical preference of the agricultural over the manufacturing man." [26]

This did not mean, however, that the Jeffersonians wished to do without

[21] *Ibid.*, vol. V, p. 153. See also *The Autobiography of Benjamin Rush,* edited by George W. Corner, Princeton, University Press, 1948, pp. 198-199.
[22] Rush, *Medical Inquiries* . . . I, p. 75.
[23] Jefferson, *Writings,* vol. II, p. 229.
[24] *Ibid.*, vol. X, p. 173.
[25] *Ibid.*, vol. II, p. 230.
[26] *Ibid.*, vol. XI, p. 3.

industry completely. Here, too, Rush made the point specifically in terms of health.

> Let us be cautious what kind of manufactures we admit among us. The rickets made their first appearance in the manufacturing towns in England. Dr. Fothergill informed me, that he had often observed, when a pupil, that the greatest part of the chronic patients in the London Hospital were Spittal-field weavers. I would not be understood, from these facts, to discourage those manufacturers which employ women and children: these suffer few inconveniences from a sedentary life; nor do I mean to offer the least restraint to those manufactories among men, which admit of free air, and the exercise of all their limbs. Perhaps a pure air and the abstraction of spirituous liquors might render sedentary employments less unhealthy in America, even among men, than in the populous towns of Great Britain.[27]

These views might be said to comprise the Jeffersonian conception of the agrarian ideal in relation to physical well-being. To complete the picture, however, we must examine the place of education and political institutions as instruments toward the achievement of their goal. Here, again, the unresolved ambiguity and duality of the Jeffersonian position is clearly revealed. To achieve the ideal agrarian society, an increasingly educated population was required which would produce natural leaders. Ignorant people, Jefferson insisted, cannot maintain their freedom, and he looked to the spread of education to enlighten men so that they would be able to decide issues for themselves. Other Jeffersonians like Rush agreed on the importance of education, but conceived its rôle in government in a more deterministic fashion. Rush leaned to a mechanical view of the educational process. "I consider it is possible," he observed, "to convert men into republican machines. This must be done, if we expect them to perform their parts properly, in the great machine of the government of the state. That republic is sophisticated with monarchy or aristocracy that does not revolve upon the wills of the people, and these must be fitted to each other by education before they can be made to produce regularity and unison in government." [28]

Jefferson's relation to education and the diffusion of knowledge may be symbolized in his connection with the American Philosophical Society,

[27] Rush, *Medical Inquiries . . .* I, p. 74.

[28] Benjamin Rush: *Essays, Literary, Moral and Philosophical,* Philadelphia, 1798, pp. 14-15. The reader will have noted that the emphases given by Jefferson and Rush are somewhat different even though basically they are in agreement. Apart from differences of personality this is due to the fact that they were influenced by different currents of European thought. While Jefferson reflected the French Enlightenment, Rush embodied the Scottish Enlightenment. In part at least this explains his combination of piety, humanitarianism, and desire to apply science to man.

which had been founded in 1742 through the cooperation of Benjamin Franklin, David Rittenhouse, and others. Jefferson was elected a member in 1780, and in 1797 president of the Society. It had been founded in the Baconian tradition to promote useful knowledge, and this view Jefferson shared. A new country with immense natural resources to develop needed a utilitarian viewpoint, and Jefferson strongly emphasized the usefulness of science.[29] Furthermore, in accepting the presidency of the Society he expressed his "ardent desire to see knowledge so disseminated through the mass of mankind that it may at least reach the extremes of society, beggars and kings." [30]

Beside increasing human knowledge, it was also necessary that the human mind be properly stimulated so that it would remain in a state of health. Stimuli deriving from politics and religion were most salutary in imparting strength to the intellectual faculties. The effects of such stimuli might be felt in several directions. Elections, as typical of representative government, were important in producing effects on the human mind. In his Commonplace Book, for instance, Rush noted that "Elections shake the public mind, improve the understanding, from influence of Passions on the understanding, promote longevity." [31] In addition, elections also increased intelligence.

> In monarchies the birth or death of a prince, the sickness of a king, and the events of a war, are the principal objects, that, by awakening the attention of a whole nation, infuse vigour into the public mind. But in republics, the same vigour is produced every two or three years by general elections. These important seasons, in which heaven renews one of the dividing lines between man, and the brute creation, interests every feeling of the heart. They stimulate the passions, which afterwards act upon the understanding, and impart to it a force, which prevents its relapsing into the repose of public apathy, during the intervals of a general suffrage. From a strict attention to the state of mind in this country, before the year 1774, and at the present time, I am satisfied, the ratio of intellect is as twenty are to one, and of knowledge, as an hundred are to one, in these states, compared with what they were before the American revolution.[32]

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[29] Charles A. Browne: *Thomas Jefferson and the Scientific Trends of his Time.* Chronica Botanica, Volume 8, No. 3, Waltham, Mass. Chronica Botanica Co., 1944, pp. 387-391; *Proceedings of the American Philosophical Society . . . from the Manuscript Minutes of its Meetings from 1744 to 1838,* Philadelphia, 1884, p. 246 et passim.

[30] Edward Dumbauld: *Thomas Jefferson, American Tourist,* Norman, University of Oklahoma Press, 1946, p. 184.

[31] Rush, *Autobiography,* p. 199.

[32] Benjamin Rush: *Six Introductory Lectures to the Course of Lectures upon the Institutes and Practice of Medicine, delivered in the University of Pennsylvania,* Philadelphia, 1801, p. 111.

With this quotation we may bring to a fitting close our brief survey of Jeffersonian thought on the connections between health and social environment. By piecing together scattered expressions of opinion on specific subjects, it was possible to show that these were founded on certain basic principles. Philosophically, this aspect of Jeffersonian thought represents an important phase of the Enlightenment in America, and thus contained the basic ambiguities and unresolved contradictions of that great intellectual movement. In practice, the ideas expressed by the Jeffersonians would seem to have achieved little of immediate significance. Like its diametrical opposite, the concept of medical police, Jeffersonian thought was considering health and society in terms soon to be discarded. The new industrial society which was just appearing on the scene would have to be dealt with in other terms. Jeffersonian thought with its emphasis on agrarianism looked backward to a golden age. Its ideals were to be repudiated and its hopes disappointed. Nonetheless, this chapter in the history of American ideas and American medicine has a basic importance. As the pioneer endeavor in this country to explore the social relations of health and disease, it represents the earliest approach to an American theory of social medicine. Whether or not the Jeffersonians influenced with their ideas the generation that dealt with the social relations of health under new conditions in the nineteenth century is still to be determined. This, however, we can say. Jeffersonian ideas on the reciprocal connections between society and human health deserve recognition as a significant phase in the history of American medicine.

THE BEGINNINGS OF AMERICAN MEDICAL HISTORIOGRAPHY *

W. B. McDANIEL 2d

" American," as used herein, will refer to the English North American Colonies that, within the period covered here, became the United States of America. It is regretted that a word with such rich connotations must be used in so limited a sense. " Historiography " will mean writings that could normally be regarded as either intentional or coincidental contributions to historiography as a special discipline. In view of the loose way in which the word *history* was used in the earlier centuries, it may not be amiss to state that no consideration will be given to works bearing such a title as—to quote one verbatim—" The History of a Retroverted Uterus." Nor shall we be distracted by the titular use of the word in what are essentially scientifically or humanistically-oriented descriptions of local epidemics. Works such as Benjamin Rush's *Enquiry into the Natural History of Medicine among the Indians in North America*, 1774, have been excluded; for present purposes, it seemed necessary to restrict ourselves to histories that move, at least in part, chronologically. Many of our 18th century American physicians possessed a marked historical sense. But what we are seeking is not historical but historiographical manifestations—the origins in this country of a discipline which by the mid-18th century had already begun, on the Continent and to some extent in England, to assume a recognizable identity.[1]

* Read at the twenty-fourth annual meeting of the American Association of the History of Medicine, Baltimore, May 3, 1951.

[1] Eighteenth century medical histories of substantial caliber antecedent to Peter Middleton's *Medical Discourse* (1769), considered below, had been published by Daniel Le Clerc (1696, but with later editions running well into the 18th century); John Freind (1725-26, with later editions); J. H. Schulze (1728); J. C. Barkhausen (1710; 1723); A. O. Goelicke (1717-1720). In addition to a number of other, less original works, there were several important historical chapters scattered through Haller's numerous works. Benjamin Waterhouse, writing in 1792 and also considered below, had still more antecedents, including such relatively recent and more readily available works as John Coakley Lettsom's *History of the Origin of Medicine* (1778), and William Black's *Historical Sketch of Medicine and Surgery* (1783). See Heischkel, E., " Die Geschichte der Medizingeschichtsschreibung," in: Artelt, W. *Einführung in die Medizinhistorik*. Stuttgart, Enke, 1949. pp. 202-237. It is not to be expected, of course, that our 18th century American physicians would have knowledge of or access to any but a few of these: notably, Le Clerc, Freind, and Black. The War of the Revolution doubtless

Before taking up two or three of the American medico-historiographical incunabula, I would like to say, paraphrasing Benjamin Waterhouse, author of one of them, " The history of these contributions is so well known to the members of this society, that my task will be to remind rather than inform them." And I pray that, at the close, you may not be tempted to mutter what was said of that contentious Boston anti-inoculationist Dr William Douglass: " He was always positive and sometimes accurate." [2]

Benjamin Franklin

More or less concurrently with this meeting, there is taking place, in Philadelphia, the official celebration of the 200th anniversary of the Pennsylvania Hospital. In 1754, Benjamin Franklin wrote and had printed at his press a 40-page, quarto pamphlet which he called, *Some Account of the Pennsylvania Hospital; from its first rise, to the beginning of the fifth month, called May, 1754*. This is respectfully submitted, quite coincidentally, as possibly the earliest specimen of American medical historiography. The period covered was a short one; the subject as limited as it well could be. Nevertheless, the " Account " wears the recognizable habiliments of conventional historiography. It is, for the most part, a narrative of past events, supported by documentation. It pictures for us the conditions leading to the idea of founding the hospital; identifies the leading actors; documents progress of the idea through addresses, replies, enabling acts, subsequent legal regulations, and managerial rules. It gives us the names of the staff, with their schedules; includes retrospective surveys of finances and cases admitted. We are told, for instance, when, how, and why the apothecary shop was instituted; when provision was made for tin boxes bearing in gold letters the words, " Charity for the Hospital." If this isn't historiography, what is it? Unfortunately, it is necessary to add that, like most institutional history, it survives for other reasons than that of continuing readability. It might, indeed, now be classified as historians' historiography.

Peter Middleton

Two years after John Morgan, with his *Discourse upon the Institution of Medical Schools in America* (1765), engendered, at Philadelphia, the first medical school in America, the trustees of King's College, in New

delayed and otherwise hindered American acquaintance with Lettsom's work, despite his several American connections.

[2] Green, S. A. *History of Medicine in Massachusetts*. Boston, Williams, 1881, p. 65.

York, were persuaded by a group of the city's prominent physicians to institute the second medical school in the Colonies. At its opening, November, 1767, the new professor of the theory of physic, Dr. Peter Middleton, delivered an introductory lecture that presumably was intended to enlighten the polite society of New York regarding the reasons for the institution of the school, even as Morgan had performed a somewhat similar, prenatal, function in Philadelphia. As augmented and published, in 1769, Middleton's *Medical Discourse, or an Historical Inquiry into the Ancient and Present State of Medicine*[3] has several claims to distinction. One of them—not hitherto asserted for it, I think—is that it probably contains more words than any other quasi-medical writing by an American physician that had been printed in America up to that time. Another is that its medico-historiographical content—though it is companioned by much that is either not medical or not historical—has led to its being commonly described as the first American publication on medical historiography. Running to 72 small-type, large-octavo pages, poorly organized, almost ludicrously discursive by present standards, for the most part pedestrian in style, the " Discourse," though appreciated in its time doubtless for the very qualities that disengage our affection, has probably since then had as wide a circle of non-communicants as any other American medical classic could complain of.

Middleton begins with an account of the institution of " publick Seminaries of Learning "—by which he means the development of group instruction from the ancient cults and *collegia* to the modern university and college—among the Egyptians and Chaldeans, the Jews, the Romans, the Persians, the Hindus, and the British Druids. We learn of the rites and the mythology of the Cabiri, the Curetes, the Corybantes, Telechines, Dactyls; those of the Salii, at Rome; the Persian Magi; the gymnosophists and Brahmins of India. The custom of traveling gradually diffused knowledge, we are told; the branching out of learning into various arts, sciences, and professions led to the support of specialized teaching in the modern universities. King's College, and its new " School of Physick," therefore merely follow the ancient and modern examples of the European nations.

Middleton then devotes considerable attention to the life of primitive man, including his diet. Various vegetarian sects are recalled, including

[3] Copies of the pamphlet are rare. The only one in the Philadelphia area, according to the Philadelphia Union Library Catalogue, is in the possession of the Historical Society of Pennsylvania, which kindly photostated it for the library of the College of Physicians of Philadelphia.

the contemporary semi-vegetarian Dunkards. Vegetarianism is allied with the belief in metempsychosis, or transmigration of souls. The recent appearance of Holwell's book,[4] which he says " is in very few hands here," induces him at this point to indulge in, " for the amusement of the curious, tho' somewhat foreign to the present subject," a lengthy disquisition on the Gentoos and the doctrine of metempsychosis. As a sort of coda, there is appended to this a paragraph recounting what Strabo has to say on the medicine of the Hindus.

Returning to primitive man, we find that he was led to medical discoveries through accident, instinct, longings, inquiry, and analogy—and, note, " by attending to the Effects of Substances upon Brutes." In view of our current concern over the legal status of animal experimentation, the following little passage seems to be worth a re-hearing:

> But the useful Discoveries which have been made in Physiology, and in the Nature and Effects of various and active *Drugs*, since the Begginning [*sic*] of the last Century, by Experiments upon different living Animals, from the stately Horse, to that Medical Martyr the Frog, are so numerous that the *Catalogue* of them alone would fill a Volume: Let it suffice to observe, that by such Experiments, the grand Discovery of the Circulation of the Blood was perfected by the immortal Harvey, and the Progress of Conception explained; by such Experiments, the Uses and Influence of the Nerves have been traced; the Peristaltic, or undulatory Motion of the Intestines exposed to View; and the Course of the Chyle, or digested Aliment from the *Bowels*, to its mixing with the *Venous Blood* under the left Collar Bone, were first demonstrated; not to mention many other valuable Acquisitions to *Natural History*, as well as to *Medicine*, from this inexhaustible Source of Knowledge.[5]

With the introduction of animal food and of fermented liquors (Middleton now describes varieties of the latter in use from Noah to the Incas of Peru),[6] came vice and debauchery and disease—and the rise of medicine. Thirty-one pages, approximately, are then devoted to an account of medicine among the most celebrated nations of antiquity—Asia, Egypt, Phoenicia, Babylonia, Scythia, the Jews, Persia, Greece, Carthage, Rome, Alexandria, the British Druids, China, Japan, India, the East Indies, Tibet, the Arabs, Turkey, Mexico, Darien (i. e., the Isthmus of Panama), the North American Indians, the negro tribes of Africa.

[4] Holwell, J. Z. *Historical Events Relative to the Provinces of Bengal and the Empire of Indostan; also the Mythology of the Gentoos, and a Dissertation on the Metempsychosis.* London: part 1, 1765; part 2, 1766; part 3, 1771.

[5] Middleton, P. *A Medical Discourse, or an Historical Inquiry into the Ancient and Present States of Medicine.* New York, Hugh Gaine, 1769, p. 17.

[6] Lettsom, in his *History of the Origin of Medicine* (1778), also seems engrossed with the subject of fermented liquors, but deals with it in his section on chemistry.

The Revival of Learning stimulated medical education. The medical profession rose more and more in fame and estimation until the immortal Harvey's light fixed his period as the most memorable era in medicine. From that time medicine has continued to flourish among the British nations with unequalled lustre.

The remaining twenty pages of Middleton's "Discourse," except for three or four afterthought ones on the office of archiater, deal with medical, though not historiographical, subjects: the differences between theory and practice; the several branches of medicine; the need for an infirmary; the evil pretensions of the empirics and quacks; the respective duties of physicians, medical students, patients.

What Middleton offered the learned New York public of 1769 was, in effect, the first account of medicine on a global basis.[7] Aside from several references to Celsus and two inconsequential ones to the "learned Dr Freind";[8] he does not acknowledge indebtedness to preceding medical historians, though there is enough evidence to rouse the suspicion that there was an unacknowledged debt to Le Clerc.[9] The text is replete (as Le Clerc's is) with references to the Scriptures, to the Greek and Roman historians, philosophers, and poets. His use of contemporary non-medical sources has already been hinted at in the mention of Holwell, of Black Hole of Calcutta fame. He used Du Halde's *Description of the Empire of China,* 1741, for his account of Chinese medicine; the French savant du Perron for his account of the Parsees; Lionel Wafer,[10] for the medicine of the Darien Indians, etc.[11]

As a medical history, this is a remarkable but disappointing work, showing little grasp of the historical fundamentals of the subject or of

[7] Le Clerc, *Histoire de la Médecine,* Amsterdam, 1702, carrying the story only up to Galen, touches non-European medicine briefly at a few points but not nearly so many as Middleton was able to reach three score and ten years later.

[8] Middleton's scant use of John Freind's *History of Physick* probably stems from the fact that it is a *medical* medical history, whereas Middleton was evidently intent upon impressing and entertaining a general audience.

[9] Compare, for instance, the respective passages on the office of archiater: Le Clerc (1702), II, 36-49; Middleton, 69-72. But here as elsewhere, despite occasional parallelisms of the closest sort, it is clear that Middleton drew information on almost any given subject from more than one source.

[10] Wafer, Lionel. *A New Voyage and Description of the Isthmus of America.* London, 1699. Wafer was a surgeon, as Middleton indicates.

[11] Like Middleton, Lettsom later also drew widely on current accounts of voyages of discovery, exploration, and conquest. Since he documents his study much more fully than Middleton did, and ranges almost as far afield, many of the latter's additional sources could doubtless be tracked down through Lettsom's references.

historiography as an independent discipline. But Middleton labored under two severe handicaps: he was out primarily to proselytize a lay audience; and he was himself evidently an incorrigible lover of information for its own fascinating self.[12] Anthropology, mythology, philosophy, general history are proper enough instruments for historiography, of course. As used by Prof. Middleton, the result is a rather naive, 18th century-style mélange in which medicine, like a seal at the zoo, raises its pointed head above the water briefly, vibrates its whiskers, snorts, and then disappears for an interminable time; now the hide breaks into view fleetingly, and, if we have the patience, at last we are vouchsafed a modest study of the silhouetted animal at rest in the open air. Nevertheless, his " Discourse," as has been hinted, has provocative implications for the student of American medical historiography, and perhaps even for the student working within a larger frame of reference.

Benjamin Waterhouse

After this ponderously impressive performance, American medical historiography rested on its laurels until it was lifted up again, twenty-three years later, by another professor of physic. In the meantime, of course, a Revolution had taken place. It was more than a military and political one; it had spiritual bases and results above and beyond those normally inherent in revolution. It is possible that Prof. Benjamin Waterhouse, in preparing for the Middlesex Medical Association, in 1791, his address on *The Rise, Progress, and Present State of Medicine*, drew slightly upon the work of his New York colleague, then dead, but he does not mention it. It does not much matter, because the two works are as unlike as the sable night and jocund day. Though ostensibly writing, like Middleton, for a mixed audience, and for an occasion somewhat out of the ordinary, and not unmindful, either, of the opportunity for a bit of proselytizing, Waterhouse seems to address himself principally to his colleagues—and, in doing so, to have felt under no compulsion to indulge in digressions " for the amusement of the curious." With due acknowledgement to the title of Prof. John Jones' Revolutionary War textbook of military surgery, this is a plain, practical, concise history of medicine for the post-Revolution American physician.

Waterhouse dwells with the Gods no longer than is necessary to place the origin of medicine in mythology, and to trace the development from Apollo through his son Aesculapius to the Aesculapian temples as the first

[12] In this, of course, he was merely revealing himself as a true child of his times.

schools of physic; with the " ruder " nations he tarries only long enough to remind us that among them the priest, the conjuror, and the physician were united in the same person. Aside from Hippocrates, Greek medicine produced, in Themison, the founder of the Methodic sect, whose reduction of diseases to two classes is later to be recalled in connection with the contemporary Brunonian system.

The character and influence of Galen's writings is demonstrated by reference to the opinions of Boerhaave and Cullen. Regarding the theories of the ancient physicians, Waterhouse told his hearers, we cannot put a very high value on them when we consider the data upon which they reasoned.

Coincident with the Dark Ages, the Arabians made useful contributions to knowledge. Wherever these Mohammedans built a temple for worship, there they erected a medical school and a hospital. Their introduction of chemistry, though blended with much absurdity, caused a revolution in the theory and practice of medicine.

Harvey's discovery overturned the whole system of Galen and the theories of the chemists. This was the era of experiment. Societies were established. The art of printing had already produced a glorious change in men's affairs. Philosophy revisited the earth, and its principles were quickly applied by physicians to medicine. *Vide* Galileo and his mathematical reasoning; the chemists; Stahl and his metaphysics; and in our time, the laws of electricity.

Cito and *jucunde* enough, if not too *tuto*, Waterhouse reaches the great figure of Boerhaave, then dead little more than half a century, whose personality and achievements are recounted at rather greater length. Following him, comparative discussions of the systems of Cullen and Brown. Regarding the latter, he says, quoting or paraphrasing Dr. Johnson, " It is possible that this sudden meteor of intelligence, which for a while may appear to shoot its beams into the regions of obscurity, will as suddenly withdraw its lustre, and leave mortals again to grope their way." [13]

Two-hundred years ago, Lord Bacon dispelled the thick cloud of Aristotle misunderstood, the false theories of Galen, the jargon of the chemists, that lay over science. The era of experiment followed. Societies were established to accumulate facts. A diffusive manner of writing crept in. But now it is wholly different. Authors find that the substance of

[13] Waterhouse, Benjamin. *The Rise, Progress, and Present State of Medicine.* Boston, T. & J. Fleet, 1792, p. 21.

folios may be digested into a few pages, the essence of libraries compressed within a few volumes. Nosology has helped to rescue medicine from confusion. Anatomy and physiology have greatly improved in the past 50 years. If all the other books of anatomy and physiology were destroyed, Haller's would alone be sufficient to convey to future ages the present stock of knowledge in those branches.[14] Surgery, natural history, and botany are in high estate. A spirit of free inquiry distinguishes the medical and other professions. The authority of great names is less venerated. Among the advantages brought by the American Revolution are American medical schools and medical societies.

Viets has called Waterhouse one of the best educated physicians in America,[15] though perhaps having in mind medical, rather than general, education. One of the significant things about his history, as compared with Middleton's, is that it completely lacks the latter's pervasive air of classical and literary scholarship. It belongs not only chronologically but spiritually to the post-Revolution generation of well-educated American physicians—Benjamin Rush is another prominent example—who knew the classical literature but were too engrossed in the challenging present to exploit it in their writings. It exults in that spirit of optimism that, as Shryock has pointed out,[16] was characteristic of medical feeling at the close of the 18th century. In Waterhouse, you have a reference or two to Homer and Diodorus and Juvenal; more often (though the greater emphasis on recent history would require this, of course) the authorities cited are 18th century ones: Boerhaave, John Aikins, Schultens' oration on Boerhaave, Dr. Samuel Johnson on Boerhaave, Cullen; in the field of history, the Abbé Millot and the Scot William Maitland, both contemporaries. Of the medical historians, Waterhouse cites only William Black, whose history had been published less than a decade earlier. Most significant, possibly,

[14] Carrying on this reflection of the 18th century's turn toward "critical empiricism" (Shryock), Waterhouse says in a footnote (p. 25): "*Haller* made a catalogue of medical books. Their number exceeded 30,000, yet from the days of *Hippocrates* to the XVth century (a space of nearly 2000 years) there were not produced *thirty* volumes, which at this day merit perusal. To read the rest *would* (to adopt the expression of Voltaire) *encumber the head with a jumble of words, and burthen the memory to no useful purpose*." He then goes on to refer the reader wishing "to see an universal library of medical and surgical books, published during the last 300 years" to "Vander Linden, Merklin [i. e., Mercklin] and *Haller's* methodus discendi artem, &c. with the *literary journals of Italy;* the *Bibliotheque* raisonné [sic] *of France;* the *Reviews* of *Leipsic* and of *London*."

[15] Viets, H. R., in *Dictionary of American Biography* 19: 530, 1936.

[16] Shryock, R. H. *The Development of Modern Medicine.* 2d. ed. New York, Knopf, 1947. Chapter 4, *passim.*

are the several references to the article on medicine in the *Encyclopedia Britannica*; an article which, in the 2d edition (the one Waterhouse used), runs to 309 pages.

Middleton had buried his subject in an elaborately contrived and overdecorated 72-page coffin. Waterhouse, in 30 pages, lifted it out, dressed it in functional, not unattractive New England garb, and brought it to table.

Conclusion

The inexorable tyrant—or, more honestly, the speaker's abuse of him—makes impossible consideration of Noah Webster's *Brief History of Epidemic and Pestilential Diseases*, 1799, and David Ramsay's *Review of the Improvements, Progress and State of Medicine in the XVIIIth century. Read on the first day of the XIXth century, before the Medical Society of South-Carolina*. Two remarkable contributions which might conclude poetically (if on chronological grounds alone) the first chapter in any history of this subject.

It does not appear that any of the works we have looked into briefly this evening had the slightest influence in stimulating interest in or the practice of medical historiography in this country. Nor does it appear that the progress of historiography suffered any grievous injury therefrom that calls for filial retribution on our part. Franklin's account of the Pennsylvania Hospital was not intended to be historiography in the usual sense, of course; it provided a prototype that was probably not even recognized as such when the time came for similar ventures in institutional history. The two medical professors had no professed followers. All were isolated, insulated phenomena. Why? Well, as medical historians, they had no sense of being innovators; what they were imparting was not information, both Middleton and Waterhouse said, but reminders. If they were but half right in this, the answer may be there. Where the sense of history is strong, the contemporary historiographer may well be a sometime thing. At all times he is needed, to collect and collate, to offer warning and hope. But he cannot provide the *sense* of history—a very precious endowment which at least the more fortunately situated of our 18th century American fathers had, which at the moment we seem rather in want of, and which we would perhaps do well to strive to make again a living part of our national human fabric.

ORIGINS AND DEVELOPMENT OF MEXICAN PHARMACOPOEIÆ

From an early Essay (1832) and the first legally enforced edition (1884) to the first official Pharmacopoeia (1930)

J. JOAQUIN IZQUIERDO *

This paper is the result of the interest shown and the requests for additional information made by some English-speaking scholars in connection with material published elsewhere [1, 2] that called attention to what was the first Pharmacopoeia not only in the Republic of Mexico, but also in other Latin-American republics, after they secured their independent life.

I. The Medico-Chirurgical Academy of the City of Puebla, and the First Mexican Pharmacopoeial Essay (1832).

Tendencies for progress among surgeons and physicians of old New Spain, which were already evident by the end of the colonial period,[3] became greatly strengthened after the country obtained political independence (1821). The pulling down of barriers, which in former days had hindered the introduction of foreign books, greatly contributed to this result.

As part of the local renaissance movement, an Academy which at the beginning of the century had a brief existence in the City of Puebla, came again into life in 1824 under the name of *Academia Médico-Quirúrgica de la Puebla de los Angeles*. Its motto was *Salus et Solatium*, and in accordance with officially approved regulations,[4] its ends were: "to promote assiduously, by every means available, progress of surgery, medicine, and auxiliary sciences"; [5] "to have doctrines incorporated into a single

* México, D. F.

[1] Izquierdo, J. J. *Raudón, Cirujano Poblano de 1810.* Aspectos de la Cirugía Mexicana de Principios del Siglo XIX en torno de una vida. Con un Prefacio del doctor Max Neuburger. Ediciones Ciencia, México, 1949, chapter xvii, pp. 230-244.

[2] Izquierdo, J. J. El Primer Ensayo de Farmacopea Mexicana. *Rev. Soc. Mex. Hist. Nat.*, vol. *10*, México, 1949, pp. 347-351.

[3] See note 1, *op. cit.*, chapter v, pp. 77-81.

[4] *Estatutos de la Academia de Medicina de Puebla.* Puebla, 1825. Reference in León, Nicolás, Los Precursores de la Literatura Médica Mexicana en los Siglos XVI, XVII y XVIII y Primer Tercio del XIX. *Gac. Med. México*, 3rd. series, vol. *10*, 1915, page 91.

[5] Martínez Marañón, R. *El Servicio Hospitalario en Puebla.* Tesis para el examen de

mass of knowledge which could make possible the simultaneous acquisition of both professions,[6] by preserving what is easiest, more advantageous, and concise, but without servile adherence to current systems"; and also, *to proceed to the arrangement of a Pharmacopoeia in which native or Indian drugs would always have a preferential place.*[7]

As members of this Academy were elected "those professors of medicine and surgery exhibiting genius, disposition for and assiduity in the execution of their tasks."[8]

The spirit which guided the activities of this group of men is reflected in the following concepts expressed in 1825 by three of them, Escalante, Mendez and Raudon (1788-1843):[9]

> Conviction of the great value of the press, both as a gauge for the learning of the nations and as an expedient for keeping the world informed about knowledge gained and work performed, has already moved the Academy to bring to light a few printed contributions, although scarcity of funds was not to allow to pay the cost of printing.[10] . . . However, encouragement and help should be given to academies, which are bodies of learned men, whose spirits, when fired by noble emulation, fear no more the inevitable pitfalls in the road of science; bodies wherein the various branches of science are comprehended by a common quest for what is beneficial and useful; where simultaneously, as a consequence of reading in the great book of Nature, some discuss phenomena and delineate the laws of existence, others resort to analysis with the purpose of making patent the different parts of the body, and others reveal to us the functions in the economy of life and formulate its problems.[11]
>
> Just as in Europe scientific progress has been greatly fostered by academies, similarly great benefits should be derived from them in America, provided that conditions be favorable and sufficient power and help be given to them by the government and authorities.[12]

To begin with, the Academy of Puebla published two printed works on subjects more or less connected with materia medica: in 1825, *Tablas*

Médico Cirujano y Partero de la Facultad de Medicina, Universidad de Puebla, 1944, pp. 78-80.

[6] It is to be recalled, that medicine and surgery were still two separate professions. The fusion of both in México was effected in 1830. See note 1, *op. cit.*, pp. 261-265.

[7] See note 5.

[8] *Ibid.*

[9] Méndez, M., Escalante M. y Juan Nepomuceno Raudón. *Trimestre de las Enfermedades Constitucionales que Reynaron en la Estación de Estío de Este Presente Año.* Leído y presentado a la Academia Médico Quirúrgica de la Puebla de los Angeles por sus socios comisionados. Puebla, Oficina de Moreno Hermanos, 1825, 50 pages.

[10] *Ibid.*, page 3. This and other quotations from the Spanish have been freely rendered into English.

[11] *Ibid.*, pp. 3-4.

[12] *Ibid.*, page 7.

Botánicas para el más pronto y fácil Estudio de la Ciencia," [13] by Don Julián Cervantes, a priest and botanist; in 1829, a translation into Spanish, by Don Pedro Calderón, surgeon, of the *Posologie* by the French author Cadet de Gassicourt.[14, 15]

At the same time, a committee,[16] under the presidency of the Spanish pharmacist Don Antonio de Cal y Bracho, was already busy with the arrangement of an essay on Mexican materia medica which came out of the printing office in the old Real Hospital de San Pedro,[17] in 1832, with the title *Ensayo para la Materia Médica Mexicana* [18] (see figure 1).

The book was dedicated (Foreword) "both to alleviate mankind's suffering and to honor a Nation favored by good fortune to enjoy a soil abundant in the products of Nature, and also in conspicuous intellects." [19]

Furthermore, after having issued the warning that many of the substances they had included had been known only to Indians and to peasants, or had been observed mostly by quaint old authors, and not by the members of modern faculties, the authors informed the reader that "the language they used was that of the former; as was also the manner of administration

[13] Cervantes, Julián. *Tablas Botánicas que para el más Pronto y Fácil Estudio de Esta Ciencia,* etc. . . . y se imprimen a expensas de la Academia Médico-Quirúrgica de la Puebla de los Angeles. Impresas en la Oficina de Moreno Hermanos, Puebla, 1825, 36 pages.

[14] Cadet de Gassicourt. *Posologia* o Descripción de las cantidades de los Medicamentos que se prescriben en las enfermedades. Leída a la Academia Médico-Quirúrgica de Puebla. Escrita en francés por C. de G. y traducida al castellano por P. C. (Pedro Calderón), Profesor de Medicina Quirúrgica. Imprenta del C. Pedro de la Rosa, Puebla, 1829. 122 pages.

[15] In A. A. Moll's, *Aesculapius in Latin America.* W. B. Saunders Co., Philadelphia and London, 1944, pp. 296, 546, 600, 601, this author's name is misspelt as Gaissecourt and Gassecourt. As the bibliographic reference is omitted, the title of his book is changed to *formulary*, and the place of its printing only vaguely referred to as Mexico. Furthermore, notwithstanding that it was a mere translation from the French language, the unwarranted statement is made that it was "the first Latin American pharmacopoeia."

[16] It has been frequently asserted that Cal y Bracho was the sole author of the Essay quoted in note 18 (i.e., N. León, paper quoted in note 4, page 83; Moll's book quoted in note 15, page 296). A glance at its title-page (see figure 1 in this paper) convinces at once of its "arrangement by a committee."

[17] In connection with the history of this old hospital, which was founded in 1542 and uninterruptedly served in that capacity for 375 years, see the book quoted in note 1, chapters II-V, pp. 33-81.

[18] *Ensayo para la Materia Médica Mexicana,* arreglado por una Comisión nombrada por la Academia Médico-Quirúrgica de esta capital, quien ha dispuesto se imprima por considerarlo útil. Oficina del Hospital de S. Pedro, a cargo del C. Manuel Buen-Abad, 1832, 102 pages. See figure 1.

[19] *Ibid.*, page vii.

they recomended, and the virtues they attributed to those substances." [20] But the authors were

> fully aware that the language was imperfect and the virtues exaggerated and even contradictory, but in proceeding that way, they thought to have exhibited the defectiveness of all the existing works, and expected that all the academies and committees of the Medical Faculty would be moved towards perfecting them and having them incorporated into a *Materia Médica Mexicana*.[21] Then, what would be deemed useless, should be rejected, and only what was useful should be preserved, and substances would appear endowed with only such virtues as repeated experiments might have demonstrated.[22]

The authors realized " that the indigenous natural products had vulgar names, frequently applied to very different materials which had nothing in common but the same uses for which they were recommended, and in connection with which no scientific knowledge had been obtained." [23] Therefore, they decided to identify them by their specific generic names, and to this end they checked the information in early sources, mainly in the *Historia Plantarum Novae Hispaniae* [24] by Francisco Hernández (1517-1587), with information in fairly recent studies made in the country by Don Vicente Cervantes (1759-1829), Don José María Mociño (1757-1819), and Don Luis Montaña (1755-1820). Furthermore, they consulted some two scores of authors listed on pages x-xi of their *Essay,* and also many others quoted in the text: Alibert, Father Alzate, Balmis, Jacquin, Jourdan, Pelletier, Caventou, and even one from the *Philosophical Transactions of the Royal Society of London,* 1824.[25]

Doctor Francisco Flores, the well-known historian of medicine in Mexico, declared, years ago, that the contents of the *Essay* we have been referring to, passed freely into subsequent Mexican Pharmacopoeiæ and other similar works.[26]

Now, it should be added, in amplification of the assertion made by León,[27] that until an earlier work of this kind is reported, the *Ensayo para*

[20] *Ibid.*, pp. viii-ix.
[21] *Ibid.*
[22] *Ibid.*
[23] *Ibid.*, page iii.

[24] Hernández, Francisco. *De Historia Plantarum Novae Hispaniae.* Cum edita, tum inedita, ad autographi fidem et integritatem expressa, impensa et jussu regio. Matriti, ex Typographia Ibarrae Heredum. 1790. 3 vols.

[25] On page 58, note 3, reference is made to a paper by Everard Home, on *Proteus Mexicanus,* published in *Phil. Trans. Roy. Soc.* 1824, second part, pp. 419-423.

[26] Flores, Francisco A. *Historia de la Medicina en México,* desde la época de los Indios hasta la presente. Con un prólogo del Dr. Porfirio Parra. México, 1866, vol. II, page 383.

[27] León, N., paper quoted in note 4, page 83.

ENSAYO

PARA LA

MATERIA MEDICA

MEXICANA,

ARREGLADO POR UNA COMISION

NOMBRADA POR LA ACADEMIA MEDICO-QUIRURGICA

DE ESTA CAPITAL,

QUIEN HA DISPUESTO SE IMPRIMA

POR CONSIDERARLO UTIL.

PUEBLA 1833.

Oficina del hospital de S. Pedro, à cargo del C. Manuel Buen-Abad.

FIG. 1

Title-page of the first Pharmacopoeia written and printed in the Republic of Mexico. (Copy in possession of the author).

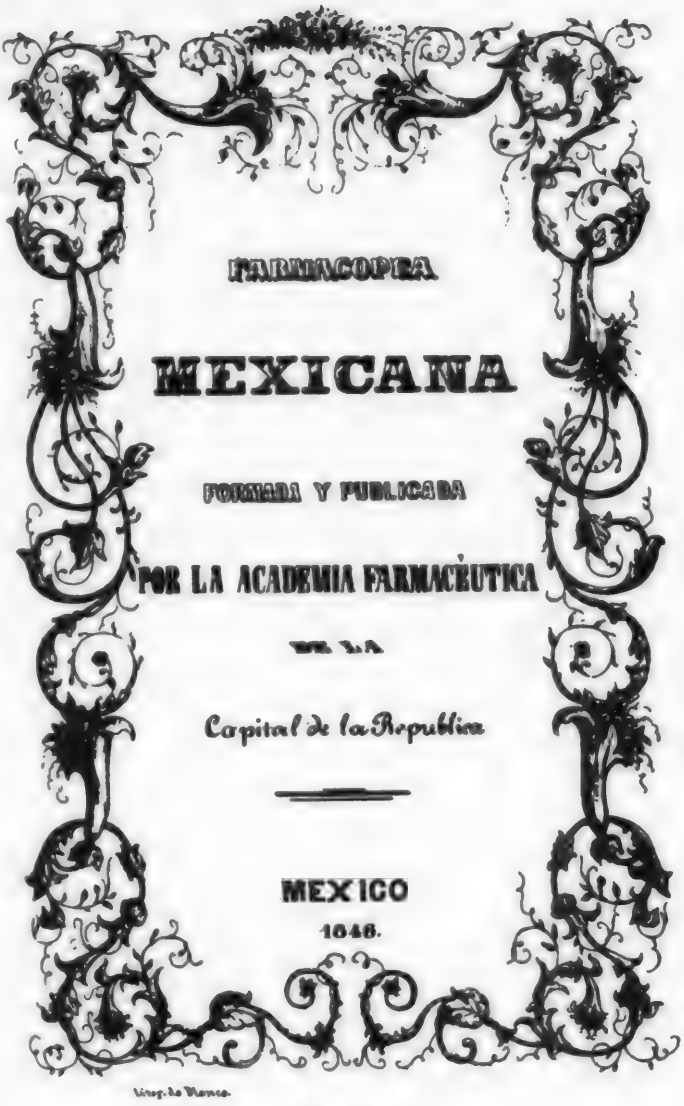

FIG. 2

Title-page of the first edition of *Farmacopea Mexicana,* 1846, arranged and published by *Academia Farmacéutica,* at Mexico City.

la Materia Medica de Farmacopea Mexicana, issued by the Academy of Puebla in 1832, must be considered the first pharmacopeial essay written and printed in any of the republics of Latin America.

II. The Pharmaceutical Academy of the City of Mexico, and its Pharmacopoeia (1846).

A group of pharmacists in the city of Mexico joined, in 1838, to constitute an *Academy of Pharmacy*,[28] with the main purpose of writing a pharmacopoeia, which they succeeded in getting out of the press in 1846 [29] (see figure 2).

In the Foreword of this book, they pretended that in preparing their work, they had in view only foreign models: "a greatly restricted and defective *Formulario*, published in 1817 by the *Real Junta Superior Gubernativa de la Facultad de Farmacia*,[30] in Spain, and a few Pharmacopoeias of other countries." [31] They declared not to have found any previous work of the kind made in their own country, which could have been used by them as a model for their "feeble essay, which would require so many changes." [32] Thus they created the false impression, which lasted till very recently,[33] that their essay had been the very first pharmacopoeia ever published in this country. But evidence presented in the previous section proves definitely that fourteen years before, the Academy of Puebla successfully presented a similar effort, with precisely the same purpose of having "indigenous substances substituted for exotic ones."

[28] *La Farmacia*, Periódico de la Sociedad Farmacéutica Mexicana, México, vol. 2, 1892, page 43. See note 46.

[29] *Farmacopea Mexicana Formada y Publicada por la Academia Farmacéutica de la Capital de la República*. Imprenta a cargo de Manuel L. de la Vega, México, 1846. 436 pages. See figure 2.

[30] The very old institution which existed in Spain, perhaps since the XIIIth century, under the name of *Protomedicato*, in 1780 and by a decree of Charles III, was divided into three autonomous divisions named *Protomedicato*, *Protocirujanato*, and *Protofarmaceuticato*, respectively. In 1799, Charles IV brought them together again in a *Junta Superior gubernativa de la Facultad reunida*, which from 1801 to February 1804 was restored to its obsolete condition of Protomedicato. In May, 1804, this was suppressed and the three *Juntas* again made independent. In 1812, the Cortes de Cádiz annuled the *Juntas*, and succeeded in turning the wheel back to conditions prevalent in 1780, but only for two years. Actually, in 1814, the *Protomedicato* was again suppressed and the three *Juntas* of *Medicine*, *Surgery*, and *Pharmacy* restored, only to be annulled in 1820, as the *Protomedicato* obtained the upper hand, although it was superseded three years latter, in 1823, and never came to life again. García del Real, Eduardo. *Historia de la Medicina en España*. Editorial Reus, Madrid, 1921, pp. 508-511.

[31] See note 29, page 2 (not numbered).

[32] *Ibid.*, page 3.

[33] See note 15.

III. The Pharmaceutical Society and the Two First Editions (1874, 1884) of Its Pharmacopoeia.

Since by 1870 the life of the Academy of Pharmacy had come to an end, and the 1846 Pharmacopoeia was not only greatly behind the times, but not even available any longer, on the 13th of February 1871, a new Society was founded (*Sociedad Farmacéutica*) with the main purpose of editing a new pharmacopoeia.[34]

Under the presidency of Doctor Leopoldo Río de la Loza (1807-1876), also President of the Society, the work was carried out by a committee

FIG. 3

Seals stamped by the *Pharmaceutical Academy of Mexico*, and the *Mexican Pharmaceutical Society*, in copies of their Pharmacopoeia (1846 and 1874), as a means of authentication.

which included a naturalist, Professor Alfonso Herrera (1838-1901); the pharmacist, José M. Laso de la Vega; and three physicians, Don Augustin Andrade (1836-1886), Don Francisco González and Don Lauro M. Jiménez (1826-1875). The manuscript was printed in 1874, under the name of *Nueva Farmacopea Mexicana*[35, 36] (see figure 4) and the

[34] Lasso de la Vega, J. M. Address at the 25th anniversary of the Sociedad Farmacéutica Mexicana. *La Farmacia*. Vol. 5, 1896, pp. 50-60.

[35] *Nueva Farmacopea Mexicana de la Sociedad Farmacéutica de México*. México, Imprenta de Ignacio Escalante, 1874. xx + 884 pages. See figure 4.

[36] Another slip originally made by F. A. Flores (see note 26) vol. iii, 1888, page 460, and subsequently repeated (cf. Moll quoted in note 15, page 296) has consisted in considering this as a "second edition," and the 1884 edition, as the "third."

NUEVA

FARMACOPEA MEXICANA

DE LA

SOCIEDAD FARMACEUTICA DE MÉXICO.

MÉXICO

IMPRENTA DE IGNACIO ESCALANTE,

Bajos de San Agustin, Num. 1.

1874

FIG. 4 -

Title-page of the first (1874) edition of *Nueva Farmacopea Mexicana*, property of the *Pharmaceutical Society of Mexico*.

NUEVA

FARMACOPEA MEXICANA

DE LA

SOCIEDAD FARMACÉUTICA DE MÉXICO

SEGUNDA EDICION

CORREGIDA,

AUMENTADA Y ARREGLADA POR LOS PROFESORES

ALFONSO HERRERA, FRANCISCO GONZALEZ, JOSE M. LABO DE LA VEGA, SILVESTRE PEREZ
Y DR. MANUEL S. SOLIANI,

Miembros de la Comision Permanente de Farmacopea
de la referida Sociedad.

MÉXICO

IMPRENTA DE FRANCISCO DIAZ DE LEON,
Calle de Lerdo número 3.

1884

FIG. 5

Title-page of the second (1884) edition of *Nueva Farmacopea Mexicana*, property of the *Pharmaceutical Society of Mexico*.

Society secured at once the literary rights.[37] As the edition sold out rapidly, a new committee [38] was formed in 1879 with Professor Alfonso Herrera, the pharmacist, José M. Laso de la Vega, and the two physicians, Don Severiano Pérez and Don Manuel S. Soriano, in order to arrange a new edition. This, i. e. the second edition, came out in 1884 [39] (see figure 5) and again the Society secured the literary rights.

IV. Plans for a National Pharmacopoeia, and Selection of a Provisional Substitute.

In 1883, the Superior Board of Health in the City of Mexico (*Consejo Superior de Salubridad*) among a number of suggestions made in preparing regulations for the sale of medicinal and chemical products, put forward the idea that a joint committee of members of that Board and professors in the Medical Faculty might combine their efforts in the preparation of a *National Pharmacopoeia*.[40] As long as this were not available, the existing second edition (1884) of the *Nueva Farmacopea Mexicana* was to be taken as the standard.[41]

As we shall see below, the projected book did not come into existence until nearly half a century later (1930). But in the meantime, some events took place, which must be recorded on account of their bearing upon the history of Mexican pharmacopoeiae:

1. The Mexican Chamber of Deputies, in a decree of December 7, 1888, ordered the creation of an institute for the study of medicinal properties which the indigenous plants of the country might have.[42, 43] But it was only after the effort of collecting, in the following year, 2,500 indigenous drugs and plants which were sent to the Paris Universal Exposition, that interest for the institution grew.[44] Plans were developed,

[37] See note 39, page v.

[38] See note 39, pp. xxiv-xxxi.

[39] *Nueva Farmacopea de la Sociedad Farmacéutica de México.* Segunda Edición corregida, aumentada y arreglada por los Profesores Alfonso Herrera, Francisco González, José M. Laso de la Vega, Severiano Pérez y Dr. Manuel S. Soriano. Imprenta de Francisco Diaz de León. México, 1884, xxxii + 310 pages. See figure 5.

[40] Comments made on this connection by Professor Maximino Río de la Loza, will be found in *La Farmacia*, vol. 1, page 273. See note 46.

[41] *Ibid.*

[42] Terrés, J. Reseña Histórica del Instituto Médico Nacional. *Gac. Med. Mex.*, 3rd series, vol. 9, 1916, pp. 132-138.

[43] Landa, E. El Instituto Médico Nacional ha desaparecido. *Ibid.*, pp. 196-199.

[44] *Datos para la Materia Médica Mexicana*, part. 1, pages 5-6. See note 55, and figure 6.

and the institute was inaugurated on August 14, 1890, and named *Instituto Médico Nacional.*

2. In the next year, the Pharmaceutical Society issued an *Appendix* [45] to the 1884 edition of the Pharmacopoeia, and also started publishing a journal, *La Farmacia,*[46] " for the diffusion of scientific knowledge in the field, and to maintain professorial rights of pharmacists." [47] This journal reached its 19th volume in 1910, and then was discontinued (see page 70).

3. The *Instituto Médico Nacional,* in 1889, started a journal, *El Estudio,*[48] which after reaching its fourth volume (1893) was changed to the *Anales del Instituto Médico Nacional,*[49] of which twelve volumes were published in the long run (1894-1914). As late as 1891, nearly all the suggestions made in 1883 were approved, except the one pointing to the 1884 Pharmacopoeia as a temporary substitute for the projected National Pharmacopoeia. The point was left to what might be prescribed in future regulations (reglamentos).[50]

Not without reason, everybody feared that formulation of these regulations would go through a very lengthy process. But, to the general surprise, they were issued only a month later, in February 1892.[51] Here, provision was made that until the National Pharmacopoeia could be available, the *Nueva Farmacopea de la Sociedad Farmacéutica Mexicana* and its suplements, ought to be taken as official standards.[52] Thus, the *Mexican Pharmacopoeia* of 1884, eight years after its printing, was officially authorized as a legal standard.

[45] *Apéndice a la segunda edición de la Nueva Farmacopea Mexicana de la Sociedad Farmacéutica de México.* Escrita por la Comisión Permanente de Farmacopea. Imprenta de Francisco Díaz de León. México, 1890. viii + 70 pages.

[46] *La Farmacia.* Periódico de la Sociedad Farmacéutica Mexicana destinado a difundir los conocimientos científicos del ramo y sostener los derechos del Profesorado. México, D. F. First series, volumes 1-19, 1890-1910; second series, volumes 1-9, 1917-1940?

[47] *Ibid.,* title-page in separate numbers.

[48] *El Estudio,* órgano del *Instituto Médico Nacional.* México, D. F. Volumes 1-4, 1889-1893.

[49] *Anales del Instituto Médico Nacional* (published as continuation of *El Estudio*), México, D. F. Volume 1-12, 1894-1914.

[50] *Código Sanitario de los Estados Unidos Mexicanos.* Edición oficial. Imprenta del Gobierno Federal. México, 1891. Article number 215, page 82.

[51] Reglamento de los Artículos del Capítulo VI, Libro 2°, Título 1° del Código Sanitario, relativo a la Venta de Substancias Medicinales en las Boticas, etc. 29 de febrero de 1892. Reproduced in *La Farmacia,* volume 2, 1892, page 79.

[52] *Ibid.*

SECRETARÍA DE FOMENTO

INSTITUTO MÉDICO NACIONAL

DATOS

PARA LA

MATERIA MEDICA MEXICANA

PRIMERA PARTE.

MÉXICO

OFICINA TIP. DE LA SECRETARÍA DE FOMENTO

Calle de Don Andrés núm. 13. (Avenida Oriente 51.)

1894

FIG. 6

Title-page of the series *Datos para la Materia Médica Mexicana* (First Part) (1894).

FARMACOPEA MEXICANA

DE LA

SOCIEDAD FARMACÉUTICA DE MÉXICO

TERCERA EDICION

Corregida, aumentada y
arreglada por los Profesores

ALFONSO HERRERA, ALFONSO L. HERRERA, ALEJANDRO URIBE,
JOSE MARIA LASSO DE LA VEGA, MANUEL F. DE JAUREGUI, JUAN B. CALDERON Y SEVERIANO PEREZ,

Miembros de la Comisión
Permanente de Farmacopea de la misma Sociedad.

(La presente obra es, por disposición del Supremo Gobierno,
obligatoria en el Distrito Federal y en los Territorios de Tepic y la Baja California.)

MEXICO

OFICINA TIPOGRÁFICA DE LA SECRETARÍA DE FOMENTO

Calle de San Andrés núm. 15. (Avenida Oriente, 51.)

—

1896

FIG. 7

Title-page of the third edition (1896) of *Farmacopea Mexicana* by the *Pharmaceutical Society of Mexico.*

Public demands for it consequently increased greatly and rapidly consumed the remaining copies of the second edition. Again the Society appointed a committee, under the presidency of Professor Alfonso Herrera,[53] to arrange a new edition "with the additions and reforms which modern advances will require."[54]

As also related to the history of Mexican pharmacopoeiæ, reference should be made here to the contemporary start by the *Instituto Médico Nacional*, under the general heading of *Datos para la Materia Médica Mexicana*,[55] of a series of special monographs, composed of materials previously published in disperse form, in the two journals *El Estudio* and the *Anales*. The first part, inaugurating the series, was published in 1894 (see figure 6), and made reference to 33 Mexican indigenous plants from the following points of view: historical, botanical, histological, chemical, physiological, therapeutical, dosimetrical, administrative, and bibliographical.[56]

V. The Third (First Legally Enforced) Edition (1896) of the Mexican Pharmacopoeia.

The Mexican Pharmacopoeia's third edition was issued in 1896[57] and, for the first time, the title page included the printed declaration that "its use was compulsory in the Federal District and Territories, in the terms of the Sanitary Code" (see figure 7).

It seems that by the close of the century, only three other standard

[53] Other members were Alfonso L. Herrera (1868-1942), Alejandro Uribe, José María Lasso de la Vega, Manuel F. de Jáuregui, Juan B. Calderón and Severiano Pérez.

[54] See note 46, volume 2, 1893, page 305.

[55] *Datos para la Materia Médica Mexicana.* Oficina Tip. de la Secretaría de Fomento, México. *Primera parte* (Part I), 518 + ii pages, issued in 1894. See figure 6. *Segunda parte* (Part II), viii + 196 pages, issued in 1898. *Tercera parte* (Part III), iv + 158 pages, issued in 1900. *Cuarta parte* (Part IV), vi + 386 pages, issued in 1907.

[56] *Ibid.*, part I, 1894, page 11.

[57] *Farmacopea Mexicana de la Sociedad Farmacéutica de México.* Tercera edición Corregida, aumentada y arreglada por los Profesores Alfonso Herrera, Alfonso L. Herrera, Alejandro Uribe, José María Lasso de la Vega, Manuel F. de Jáuregui, Juan B. Calderón y Severiano Pérez, Miembros de la Comisión Permanente de Farmacopea de la referida Sociedad. (La presente obra es, por disposición del Supremo Gobierno, obligatoria en el Distrito Federal y en los territorios de Tepic y la Baja California). Oficina Tipográfica de la Secretaría de Fomento, México, 1896. xxiv + 590 pages. (See figure 7).

pharmacopoeiæ existed in the republics of Latin-America: [58, 59] one issued in 1886, in Chile, but apparently in preparation since 1880; another published in Argentina in 1893, but put in force in 1898; and a third one published in Venezuela in the same year.

VI. Complementary Remarks.

In 1904, as neither conditions nor regulations regarding the pharmacopoeia had changed, the Pharmaceutical Society issued a 4th edition of its *Farmacopea Mexicana.*[60] But subsequently, the Society began to decline and by 1910 it came to an end.[61]

Work done in the *Instituto Médico Nacional* continued to be published in its *Anales,*[62] and periodically in monographs, as parts of the series devoted to materia medica.[63]

In 1913, the institution issued the *Farmacología Nacional,*[64] " a reference book where practitioners and pharmacists could find solution for many current doubts, and review knowledge indispensable for a good practice." [65] Only two years later, in September 1915, the institute was suppressed and transformed into the new *Instituto de Biología General y Médica.*[66, 67]

The Society of Pharmacy was revived in 1916, with an entirely new

[58] Wilbert, M. I. Las Farmacopeas de la América Española. *La Farmacia* (see note 46), volume XIX, 1910, pages 196-197. (Apparently this is an abstract from an article, but journal and place of publication are omitted).

[59] Moll, *op. cit.,* in note 46, pp. 296-297.

[60] *Nueva Farmacopea de la Sociedad Farmacéutica Mexicana.* Cuarta edición. Corregida, aumentada y arreglada por los Profesores Juan B. Calderón, Alejandro Uribe, Juan M. Noriega, José Donaciano Morales, Mariano Lozano y Castro, Francisco Bustillos y Suplente Francisco Solórzano y Arriaga. Miembros de la Comisión Permanente de Farmacopea de la referida Sociedad. Secretario de la Comisión, Profesor Miguel Cordero. (La presente edición es por decreto del Supremo Gobierno, obligatoria en el Distrito Federal y Territorios). Oficina Tipográfica de la Secretaría de Fomento, México, 1904. 1 + 1144 pages.

[61] See *La Farmacia* (note 46), volume 19, 1910, page 49.

[62] See note 49.

[63] See note 55.

[64] *Farmacología Nacional,* formada por el *Instituto Médico Nacional.* Tipografía Económica, México, 1913. xiv + 1226 pages.

[65] *Ibid.,* pages iv-v.

[66] See notes 42 and 43.

[67] In connection with activities planned for the new Institute, see Herrera, Alfonso L. Discurso oficial de inauguración (inaugural address). *Boletín de la Dirección de Estudios Biológicos,* México, 1915, volume 1, pp. 4-14.

organization and a new name: *Unión Nacional de Farmacéuticos Científico-Cooperativa.*

The journal, *La Farmacia,* was also revised and entered into a second epoch.[68] Corrections, amplifications, and reforms were made to the fourth edition of the *Nueva Farmacopea Mexicana,* and a fifth edition was issued in 1925.[69] As basic regulations remained unaltered, again it was the standard, but only for five years, because, in 1930, the *Farmacopea Nacional,* which had been suggested in 1883, at last was issued [70] " to fill the existing gap which had persisted for many years, due to the lack of a National Codex." [71]

[68] See note 46.

[69] *Nueva Farmacopea Mexicana de la Sociedad Farmacéutica Mexicana.* (Unión Nacional de Farmacéuticos Científico-Cooperativa). *Quinta edición.* Corregida, aumentada y reformada por la Comisión Permanente de Farmacopea de la referida Sociedad. Editorial " Cultura," México, 1925. lxii + 1496 pages.

[70] *Farmacopea Nacional.* Departamento de Salubridad Pública. Talleres Gráficos de la Nación. México, 1930. viii + 808 pages.

[71] *Ibid.,* Foreword, page v.

METAPHYSICAL TRENDS IN MODERN PATHOLOGY [1]

CLAUDIUS F. MAYER

Every branch of science has its roots in metaphysics. Medicine and its subdivision, pathology, are no exceptions. In the writings of Dr. Welch we find the axiom that "the ultimate problems of reality and of knowledge belong to metaphysics." [2]

When Samuel David Gross, early American pathologist, published his textbook in 1839 he printed this motto on the title-page: "In morbis, sive acutis, sive chronicis, viget *occultum*, per humanas speculationes *fere incomprehensibile*." (In the diseases, be they acute or chronic, there is something, a hidden element that human speculations can hardly grasp).[3]

It is my purpose to lead you on a brief tour in modern history and, from the viewpoint of a historian and pathologist, to show how our specialists inclined to deal with their "occultum . . . fere incomprehensibile."

Modern research in pathology marks its beginning with 1761 when Morgagni published his classical work, *De sedibus et causis morborum libri quinque*.[4] Since then, pathology marched along almost 200 years. Let us lay down these 200 years on the big ruler of Time and divide them into four 50-year portions (see fig. 1). During the first three phases of the history of modern pathology the chief characteristic of research was the anatomical idea. For almost 150 years the interest of the pathologists was focused upon the question, what part of the body carries the disease? With the advancement of our knowledge of the parts in our body the pathologists continued to shift the site of disease into smaller and smaller units of man's structure. For Morgagni, in 1761, the smallest structural unit was an organ; hence, his was an organ pathology. For Bichat,[5]

[1] Extended from an informal talk to the medical officers of the Armed Forces Institute of Pathology, 15 March and 3 May, 1951, and read at the twenty-fourth annual meeting of the American Association of the History of Medicine, Baltimore, May 4, 1951.

[2] William Henry Welch (1850-1934): The interdependence of medicine and other sciences of nature, *Science*, 1908, 27: 49-64. Cf. his *Papers and Addresses*, 1920, 3: 317. Welch wrote a few essays of a speculative nature.

[3] Samuel David Gross (1805-1885): *Elements of pathological anatomy* (Boston, 1839) in 2 vols. He was professor at Cincinnati Medical College; also known for his surgical skill. His motto comes from a work of Giorgio Baglivi (1668-1707).

[4] Giambattista Morgagni (1682-1771), Padova professor of theoretic medicine, wrote his work in the form of 70 letters. I used the 1827 Leipzig edition prepared by J. Radius.

[5] François Xavier Bichat (1771-1802): a) *Traité des membranes en général* (Paris, 1800); b) *Anatomie pathologique* (Paris, 1825). He started his dissections in the

in 1800, the smallest structural unit was the membrane and tissue; hence, his was a tissue pathology. For Virchow,[6] in 1858, the smallest unit was the cell; hence, his was a cellular pathology. Finally, at the beginning of the 20th century, the anatomical and analytical approach to pathology brought on discontent in the world of the sick as well as among clinicians and practitioners.

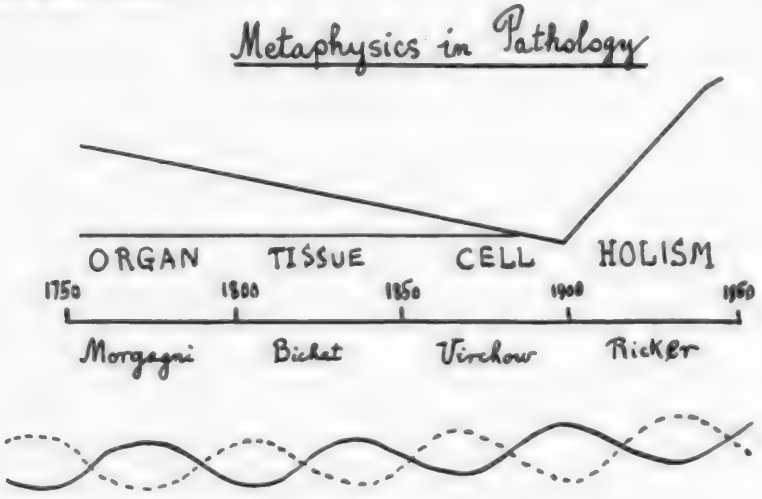

FIG. 1

The metaphysical views on the true nature of disease moved along with the site of the disease, in correspondence with two infinite wavelike movements of the two fundamental ideologies about the universe which in the natural sciences are interwoven with irregularly alternating opposite peaks and valleys: the *mechanistic* ideology on top of one wave, and the *vitalistic* on top of the other. One will consider all normal and abnormal changes in the human body the results of physically measurable quantities while the other will assume the existence of a durable and unmeasurable (hence, metaphysical) energy of life, a vital force which the pathologist may please to call by any name according to his religious affiliation.

Hôtel-Dieu in Paris, 1797. His metaphysical views are discussed in his *Recherches physiologiques sur la vie et la mort* (first ed., 1800; another, Paris, 1844). On p. 1 he defined life: "*La vie est l'ensemble des fonctions qui résistent à la mort.*"

[6] Rudolf Virchow (1821-1902): *Cellularpathologie* (1. Aufl., 1858; 4. Aufl., Berlin, 1871). For him the essence of disease ('ens morbi') was the sick cell.

I should like to discuss in particular the last 50 years, the fourth segment of our time ruler, since the previous three phases in the development of pathology are well known to you from your own medical and historical studies.

The fourth phase of modern pathology on our ruler begins at 1900. This is the date of birth for the quantum theory of Planck [7] and nuclear physics, and the date of death for classical mechanics, for the rigid laws of determinism, and for cocksure certainty of the so-called exact sciences.[8] The revolution in physics brought up the idea of wholeness in physical integrated systems, and helped the biological sciences in shaking off the fetters of mechanistic thinking. In general biology, the re-integration of cells, tissues, and organs into an individuum, a living organism, was the merit of Driesch,[9] Haldane [10] and others. General Smuts [11] named the new approach to life's problems *holism* (from *τὸ ὅλον*: the whole, the totality).

Holism is the doctrine that the dynamics of a living whole permits of no differentiation of discrete elements. Its fundamental principle is that an integrated or co-ordinated *whole* is more than just the sum of its constituents. The holistic viewpoint assumes that man is a single, indivisible biological unit and not a socialistic state of autonomous cells as had been taught by Virchow; [12] that as a living organism man has to be considered together with his environment. Holistic philosophy is contrary

[7] Max K. E. L. Planck (1858-1947): *The origin and development of the quantum theory* (Oxford, 1922). His basic idea is expressed in this sentence: "An harmonic oscillator of frequency ν (*nu*) in interaction with radiation can change its energy by only a multiple of $h\nu$ where h is a universal constant of dimensions erg sec."

[8] For the philosophical consequences of the anarchy in modern physics cf. M. C. Johnson: *Science and the meaning of truth* (London, 1946) — H. Reichenbach: Kausalität und Wahrscheinlichkeit in der Biologie, *Klin. Wschr.*, 1932, 1: 251. — P. Daure: Le rôle de l'incertitude dans la science et dans l'action, *Rev. philos.*, Par., 1944, 134: 289-304. — E. F. Caldin: *The power and limits of science* (London, 1949), etc.

[9] Hans Driesch (1867-1941): *Die Localisation morphogenetischer Vorgänge* (Leipzig, 1899); also his *The science and philosophy of the organism* (London, 1908).

[10] John Scott Haldane (1860-1936): *The new physiology* (1907; London, 1919); also his *The philosophy of a biologist* (2. ed., Oxford, 1936).

[11] General J. S. Smuts: *Holism and evolution* (quoted by Haldane).

[12] In his *Cellularpathologie* (4. Aufl., 1871) Virchow asserts: "Jedes Tier erscheint als eine Summe vitaler Einheiten, von denen jede den vollen Charakter des Lebens an sich trägt. Der Charakter und die Einheit des Lebens kann nicht an einem bestimmten einzelnen Punkte einer höheren Organisation gefunden werden. . . . . Daraus geht hervor, dass die Zusammensetzung . . . des sogenannten Individuums . . . einen Organismus socialer Art darstellt. . . ." (p. 17).

to both the mechanistic and the vitalistic ideology of previous centuries.[13] In the field of pathology it means a complete about-face in the direction of research, a turn from the dead human parts and formalin-kept specimens to the living human body as the object of scrutiny.[14]

Holistic Pathology, 1900 ——

1. Constellation (1920: Tendeloo)
2. Constitution (1914: Martius; 1919: Kraus)
3. Humoralism (1910: Richet)
   a) Chymology (1929: Gallois)
   b) sero-morphology (1927: Löschke)
   c) colloidal (1922: Lumière)
4. Intercellular substance (1943: Chiari)
5. School of Aschoff (1936: Aschoff)
   a) Hetology; Emptomatology (1949: Gräff)
6. Clinical physiopathology (1950: Hoff)
7. Function (1912: Bergmann)
   a) Psycho-somatic medicine
8. Relation (1905: *Ricker;* NEURO-HUMORO-CELLULAR TRIAS)
   a) neuro-cellular dualism (1935: Speransky)
9. Dynamic reaction (1946: Neergaard) 'CHRONOHOLISM'
10. Quantum biology (Pascual Jordan)
    a) Biological medicine (1936: Kötschau)

TABLE 1

Many are the varieties of holistic approach in modern pathology. Most of them grew up in European countries, mostly in Germany and among her neighbors. Some of them remained of transient interest only while a few of them became internationally known. They may differ in details but all of them agree in the open revolt against the age-old anatomical idea, against the localization of disease in structural parts of the body. (See table 1).

[13] The literature on holistic philosophy is extensive. For general orientation see footnotes 10 and 11; also Meyer-Abich: *Ideen und Ideale der biologischen Erkenntnis* (1934). — W. E. Agar: The wholeness of the living organism, *Philos. of Sc.*, Balt., 1948, 15: 179-191. — A. Meyer-Abich. Holismus; ein Weg zur Synthese der Naturwissenschaften, *Physis,* Stuttg., 1949, 2/3: 82 etc. — Kötschau: *Theoretische Grundlagen zum Aufbau einer biologischen Medizin* (Dresden, 1936), etc.

[14] Holism has nothing to do with the Hippokratic idea of "Totus homo a natura morbus." Cf. J. N. Millin de la Courveault: *Quaestio medica, estne totus homo a natura morbus?* Paris thesis, Paris, 1753.

The starting points of these holistic pathologies are also different, and according to their "lines of attack" the degree of their success in integration of the organism varies. One may stress the concurrence of the many environmental factors in human disease as does Tendeloo about 1920 in his *pathology of constellations* [15] while the other emphasizes the role of both heredity and environment as does the *pathology of constitution* [16] of Martius in 1914. On the ground of constitution Kraus was able to work out a biology and *pathology of the person* (1919).[17]

The renaissance of a kind of *humoral pathology* was also favored by the gradual discredit of anatomical thought and by the advancements in physiological chemistry. It was recognized that all living cells are aquatic, and the human cells are no exception.[18] Modern humoralism comes from France where Charles Richet especially promoted its growth.[19] From the viewpoint of a modern humoralist, health as well as disease are properties of the whole body, one being the balance and the other the imbalance between forces of the organism and of the external world. Lumière, the Lyon patho-biologist, suggested in 1922 another version of this doctrine according to which disease is an irritation of nerve endings due to precipitated or flocculated colloids; the colloidal equilibrium could be broken by a great variety of external and internal influences.[20]

Another dissatisfied group of pathologists attempted to save the anatomical localization principle by: a) either assigning more importance to certain general structural elements of the body b) or attempting to work with hypotheses which could bridge over the gap between various theories

[15] Nicolaas Philip Tendeloo: *Allgemeine Pathologie* (Berlin, 1919); also his *Konstellationspathologie und Erblichkeit* (Berlin, 1921) and: *Grondbeginselen der algemeene siektekunde* (Groningen, 1922).

[16] Friedrich Martius (1850-1923): *Konstitution und Vererbung* (Berlin, 1914). The idea of constitution is ancient. Further development of constitutional pathology is the merit of B. Bauer, Aschner, Theodor Brugsch, Kretschmer, Pende, Viola, etc.

[17] Friedrich Kraus (1858-1936): *Pathologie der Person* (Leipzig, 1919). He called it "clinical syzygiology."

[18] W. B. Cannon said in 1930 that ". . . every part of us that is alive is in contact with fluid." Cf. E. V. Cowdry: *Textbook of histology* (Philadelphia, 1950), p. 44.

[19] Charles Robert Richet (1850-1913), professor of physiology, Paris. Cf. his address in 1910 at the International Congress of Physiology: On ancient humorism and modern humorism, *Brit. M. J.*, 1910, 2: 921-6. P. Gallois suggests the term "chymology" for distinction of modern humorism; cf. his article in *Bull. Soc. méd. Paris*, 1929, No. 10, 234-8.

[20] August Lumière (1862——): *La renaissance de la médecine humorale* (Lyon, 1922); also *Grundlagen und Praxis der neuen Humoralmedizin* (Wien, 1937).

of disease. Hueck's doctrine on the mesenchyme,[21] Chiari's efforts towards a pathology of *intercellular substance*,[22] and Aschoff's description of the reticuloendothelial system, in spite of their primarily morphological tendency, indicate a gradual abandonment of the small cell even in the circle of the more conservative tissue-pathologists. The other road was followed by Löschke in 1927 when he offered a serological hypothesis for the explanation of a degenerative systemic disease.[23]

The holistic views of the *Aschoff School* have been aired by the master himself in 1936.[24] According to his ideology, disease has two components: 1) "reaction" to the pathogenic agent of the environment; this he calls *nosos*, and 2) a residual constitutional change of the body as a whole, a "tendency to react"; this he calls an affection, or *pathos*. He holds that life phenomena cannot be explained fully by the physical laws of cause and effect because by its being a wholeness the organism has certain forces which cannot be measured by ordinary means. A causal-analytical consideration is good and possible only for the strictly material, bodily relations of human life, within the realm of a few theoretical branches of medicine. But, for practical medical work the consideration of *all* parts of the human being is essential, including the subject of psychology. One of Aschoff's pupils went as far in holism as to create new terms for the holistic pathology.[25] (*Hetology; emptomatology*).

Among the more conservative trends in pathology is one which calls itself *clinical physiopathology*.[26] Another more restrained trend is the

[21] Hueck: in *Zieglers Beitr.*, 1920, 66: 330. See also Werner: *Morphologische Pathologie* (Leipzig, 1937).

[22] Hermann Chiari, professor of pathology, Wien. Cf. his article: Ueber Morphologie und Funktion in der Pathologie, *Wien. klin. Wschr.*, 1943, 56: 475-9.

[23] Loschke: in *Zieglers Beitr.*, 1927, 77: 231. See also W. Volland: Solidarpathologie und Humoralpathologie in der modernen Krankheitsforschung, *Deut. med. Wschr.*, 1943, 69: 568-71.

[24] Karl Albert Ludwig Aschoff (1877-1942), professor of pathology at the University of Freiburg (i. B.). For his basic ideas on holism see his article: Pathologie und Biologie, *Klin. Wschr.*, 1936, 15: 1465-9. Also published in the Hungarian *Orvosképzés*, 1936, 26: 681-7.

[25] Siegfried Gräff, hospital pathologist in Hamburg, created the term "hetology" to show the originality of his own ideology. He states that the anatomical thought as represented by Morgagni and Virchow was detrimental to the clinic because it identified disease with the diseased part of the body. In his view, disease is of the whole man; its structural and functional signs are only "emptoms" (à la symptom). The clinical study of these emptoms is the task of pathological research which he calls *emptomatology*. Cf. his article: Die pathologisch-anatomische Betrachtungsweise in der medizinischen Forschung und Lehre seit Morgagni und das Arzttum, *Deut. med. Wschr.*, 1949, 74: 65-8.

[26] Ferdinand Hoff, director of Medical Clinic, Aachen Hospital: *Klinische Physiologie*

functional pathology of Bergmann which has been growing since 1912.[27] It teaches that functional disorders may originate in an upset of the balance of the autonomic nervous system and may finally end in organic lesions, e. g., in ulcers of the stomach. Functional pathology prepared the way for our modern *psychosomatic medicine*; it also resulted in a somewhat cautious reform of surgery upon a functional basis.[28] The latest attempts of our military medical establishments at healing perforated gastric ulcers may be also considered a victory for the holistic approach in pathology.

The most remarkable are those holistic pathologies which are built upon the nervous system as the chief integrating principle for the coordinated maintenance of the living organism.[29] Gustav Ricker was the first and the earliest (1905) with his *pathology of relations* (" Relationspathologie ").[30] Though his work is almost unknown to American pathologists it seems to me that his ideas will grow as important for the future development of medical research as was Virchow's cellular theory for the second half of the 19th century.

His pathology is built around the circular relation of three elements of equal rank in the body: the neural (vasomotors), the humoral (bloodvessels, blood and tissue fluid), and the cellular (tissues). The neural element establishes integration of the entire organism by the infinite thread of terminal network which, according to modern histology (Stöhr, Boeke, Sunder-Plassman), ties up cell after cell. Irritation of the vasomotors causes changes in the width of bloodvessels, thereby in the quantity of

und Pathologie (Stuttgart, 1950). On p. viii: " Die Krankheit ist nicht ein anatomischer örtlicher Vorgang oder eine physiologische isolierte Funktionsstörung, sondern eine Angelegenheit der lebendigen Einheit des Organismus. . . . Wie alles Leben eine seelisch-körperliche Einheit darstellt, ist auch die Krankheit ein seelisch-körperliches Phänomen."

[27] Gustav von Bergmann (1878——), professor of internal medicine, Berlin: *Funktionelle Pathologie* (1932; 2. Aufl., Berlin, 1936).

[28] Christian van Gelderen, Amsterdam surgeon: *Funktionelle Pathologie in der Chirurgie* (Berlin, 1943). For this type of surgery the anatomical substratum is of lesser importance since pathological structures may result from mental tension.

[29] References to a possible pan-neural pathology date from the 19th century. Cuvier: " Le système nerveux est tout l'animal; les organes ne sont là que pour le servir." Felix Marchand, Giessen pathologist, wrote: " Der Nerveneinfluss spielt eine grosse, früher ungeahnte Rolle bei vielen, ja den meisten Zelltätigkeiten, und zwar nicht etwa durch Regulierung des Blutzuflusses allein, sondern durch direkte Verbindung der Nervenenden mit den Zellen selbst." Cf. his *Ueber den Wechsel der Anschauungen in der Pathologie* (Akademische Antrittsrede, 12. Nov. 1881) Stuttgart, 1882, p. 17.

[30] Gustav Ricker (1870-1948): *Entwurf einer Relationspathologie* (Jena, 1905); also his earlier work: Beiträge zur Kenntnis der Veränderungen des Muskels nach der Durchschneidung seines Nerven, *Virchows Arch.*, 1899, 158: 199.

blood supply and the quality of tissue fluid. Such changes will then modify the relation between the fluid element and the solid cell element, with resulting changes in metabolism, structure, and function. The cellular changes may again act upon the neural elements (neuricon). Strong stimulation of the neural element will result in disease; mitigation of the stimulus will bring on healing.

Ricker's doctrine found many followers in Germany and his general theory was also transferred to special fields of pathology.[31] Among his followers there is a special one, a Russian scientist, called Aleksandr Dmitrievich Speransky,[32] director of the Physiopathological Department of the Leningrad Institute of Experimental Medicine. He is better known in English-speaking countries than his master, Gustav Ricker. His relation pathology is built upon two elements only: the neural, and the cellular. He considers that all diseases, including the acute exanthematic diseases such as scarlet fever, are brought about by a primary direct irritation of the central nervous system, and the diencephalon. He was able to design new, unusual methods for the irritation of the brain and central nervous system in order to prove the validity of his theory. These are: a) spotwise freezing of the brain cortex, b) pumping of cerebrospinal fluid in a way to massage the spinal cord and the brain, and c) insertion of glass beads in the brain tissue. By such methods he was able to produce various diseases at the periphery of the body, e. g., diseases of the gums and typical paradentosis.[33]

The importance of the diencephalon has been also proved by another follower of Ricker, Wolfgang Veil.[34] Speransky's influence extends also to Great Britain where Wyburn-Mason, London neurologist, published his work on *Trophic Nerves* in 1950, showing radicalism of thought in the sense of the relational pathology.[35]

[31] Cf. H. H. Kalbfleisch: Wandlungen in den Grundlagen der Pathologie, *Deut. Gesundheitswes.*, 1947, 2:372 etc.—His followers include: Veil, Schäfer, Döring, Kalbfleisch, Dietrich, Sturm, Nonnenbruch, Siegmund, etc.

[32] Speransky (1887——) published his works in Russian in 1935. English translation: *A basis for the theory of medicine* (New York, 1943). See also Gustav Ricker's *Allgemeine Pathophysiologie von A. D. Speransky* (Stuttg., 1947).

[33] Cf. J. Rof Carballo: *Patología psicosomática* (Madrid, 1950).

[34] W. H. Veil & A. Sturm: *Die Pathologie des Stammhirnes* (Jena, 1946). They found that the diencephalon is responsible in exophthalmic goiter, certain types of obesity, diabetes mellitus et insipidus, arterial hypertension, etc.

[35] Wyburn-Mason: *Trophic Nerves* (London, 1950). He states that "any influence acting on a tissue does so first by acting upon the unmyelinated fibres of the tissue before it affects other constituents. Inflammation merely means nervous activity. . . ." p. vi. His book's motto is: "The beginning of wisdom is to unlearn that which is taught" (Antisthenes).

The culmination of holistic ideology is reached in the work of Kurt von Neergaard entitled *Dynamische Reaktionspathologie* (1946).[36] Since for him the word "dynamic" means both functional and historical he considers time an essential element of disease so that his "holism" becomes a true "chronoholism" in the sense of Donnan.[37] The small group of men who belong to the guard of the Stuttgart periodical *Physis* represent similar views and are the banner-bearers of holistic pathology today. They are Pascual Jordan, the quantum biologist of Rostock, Adolf Meyer-Abich, the philosopher in Hamburg, and Karl Kötschau, professor of biological medicine in Jena. Their work on the echelons of reality, on Bohr's biophysical uncertainty relation or complementarity and on the mental procedure of "holistic simplification" is a remarkable effort to exploit the achievements of microphysics for biology.[38]

[36] Neergaard is professor of physical medicine at Zürich, Switzerland. His studies on "Katarrhinfektion" (1939) led him into holism, or chronoholism. He accepts individuality as a basic quality of all life. In his opinion (p. 84) the classical descriptions of diseases are statistical rapes on reality.

[37] F. G. Donnan introduced the term of 'chronoholism' which means the occurrence of the historical element in a biological phenomenon in distinction from a non-historical or merely physical phenomenon. The first is expressed by an equation that differs from the mathematical expression of the physical phenomenon by an additional integral member only. By such equations he proved in the language of mathematics that theoretical physics is the simplification of theoretical biology. Cf. his article: Integral analysis and the phenomena of life, *Acta biotheor.*, Leiden, 1936, 2: Heft 1.

[38] *Physics; Beiträge zur naturwissenschaftlichen Synthese.* Stuttgart, Hippokrates-Verlag, 1942, v. 1, Heft 1; 1949, Heft 2/3; edited by Adolf Meyer-Abich. Cf. also Kotschau & Meyer-Abich: *Theoretische Grundlagen zum Aufbau einer biologischen Medizin* (Dresden, 1936), on p. 24: "Jeder physiko-chemische Eingriff in den Betrieb eines lebendigen Organismus liefert immer nur physiko-chemische Ergebnisse und niemals biologische Resultate, da jeder derartige Engriff das charakteristisch Organismische vorher abtötet, Biophysik und Biochemie also immer nur 'Biologie,' oder richtiger Physikochemie, von *Leichen* sind." Hence, the physicochemical and biological qualities of organismic systems are complementary complexes (p. 25).

The holistic ideology distinguishes six echelons of reality (in ascending order): 1. mechanical (classical physics), 2. physical (nuclear physics), 3. organic (biology), 4. psychic (psychology), 5. social (sociology), 6. historical (the cultural sciences). Uncertainty relation or complementarity (Bohr) develops when a higher echelon of reality is explained with the theoretical means of a lower echelon. Explanation should proceed from the higher echelon to the lower by reducing the dimensionality of the higher to the dimensions of the less complex echelon. This is called "holistic simplification" (see table 2).

Holistic
Echelons of Reality

6. Historical (: cultural sciences)
5. Social (: sociology)
4. Psychic (: psychology)
3. Organic (: biology)
2. Physical (: nuclear physics)
1. Mechanical (: classical physics)

Kötschau: *Theoret. Grundl.*,
Dresden (1936)

TABLE 2

The holistic approach to pathology and the new principles of scientific research which developed from the anarchy in physics are gradually gaining weight also in North American clinics and laboratories.[39] Pathology of the whole man is coming in place of pathology of the dead parts of man. More and more of us believe that the essential element of disease, regardless of its particular point of attack, is the shock to the existence of the individual caused by the disturbance of a well-regulated functioning of his organism (Robbins).[40] The physician's goal is then to provide a possibility of existing in spite of disturbance and defect.[41]

Man's effort will continue to penetrate into the fundamental nature of things, in the macrocosmos as well as in his own microcosmos. Whether he will ever be able to understand it fully I would not dare to forecast. Yet, in 1936, Ludwig Aschoff pessimistically announced: "The pathologist as a human being must be fully conscious of the fact that he will not be able to unveil the fundamental secrets of Creation by any way of approach." [42]

This must be then the truth and the ultimate fate of metaphysical speculations in biology and pathology because it has not changed since 1839 when Samuel David Gross, early American, wrote with great

[39] Selye: *The physiology and pathology of exposure to stress* (Montreal, 1950); see there his theory of alarm reaction and of adaptation syndrome.

[40] Cf. S. L. Robbins: Some new pathological concepts, *New England J. M.*, 1950, 242: 618.

[41] Cf. K. Goldstein: *Human Nature* (Cambridge, Mass., 1940) pp. 5-6.

[42] Aschoff: Pathologie und Biologie, *Klin. Wschr.*, 1936, 15: 1465-9: "Nur muss er (der Pathologe) sich als Mensch bewusst sein, dass es ihm mit keiner der Betrachtungsweisen möglich sein wird, die letzten Geheimnisse der Schöpfung zu entschleiern."

humility: "Of the essence of disease, very little is known; indeed, nothing at all; nor can the utmost ingenuity hope to remove the veil which still envelopes the subject. . . . With this, indeed, every philosophical inquirer after truth should be contented, remembering that the secrets of nature are not easily detected, and that to God alone belongs the knowledge of the intrinsic property of things." [43]

SUMMARY

Modern pathological research began with Morgagni in the 18th century. Since his times, pathological anatomy has passed through various phases of evolution, shifting the emphasis to smaller and smaller details of the organism. The concept of *disease* also underwent significant changes as Morgagni's organ pathology gave way to Bichat's tissue pathology and the latter was replaced by Virchow's cellular pathology.

The materialistic point of view of analytical research in pathology brought on disappointment in medicine. The modern trend attempts to re-integrate the individuum, and several metamicroscopical (i. e., metaphysical) theories of disease offer means for such reintegration by synthesis of the accumulated details. The holistic views of Planck, Driesch, Bergmann, Ricker, Speransky, Neergaard and Wyburn-Mason opened new perspectives for the future development of pathology.

[43] S. D. Gross: *Elements of pathological anatomy* (Boston, 1839) v. 1, p. 23.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

CORRESPONDENCE AND REPORTS

Dr. Lee's Address at the Gold-Headed Cane Ceremony

University of California, School of Medicine, June 5, 1951

A cane modeled after the famous old gold-headed cane immortalized in Macmichael's book is awarded annually to a senior medical student of the University of California School of Medicine who has in greatest measure the qualities of "a true physician" and has shown "the greatest interest in the care of his patients during the clinical year." An eminent physician is selected to give an address on the occasion, and he, too, receives a gold-headed cane. The two canes pass from winner to winner and from speaker to speaker. The ceremony was inaugurated in 1939 by Dr. William J. Kerr, Professor of Medicine and Chairman of the Division of Medicine. In his own words, Dr. Kerr "sought a device for bringing the Art of Medicine more forcibly to the attention of students, faculty, and of all those concerned with the care of patients. The Gold-headed Cane provided the inspiration."

The winner of the 1951 honor was Charles J. Carman, while John Lewis Linville and George W. Smith received honorable mention. The guest speaker was Dr. Roger Irving Lee, prominent Boston physician and Harvard alumnus, a former president of the American College of Physicians and the American Medical Association.

ALAS, POOR YORICK. I KNEW HIM, HORATIO

Roger Irving Lee

On page 179 of *The Gold-Headed Cane*, first edition, 1827, the cane concludes: "But I have done. It has already been explained how I came to occupy my present position; and having once passed under the splendid portico of the New College, I am afraid there is no chance of my ever emerging from the dark recess I occupy in its library." But, one hundred and twenty-three years later, in the year 1950, Lord Moran, until recently President of the Royal College of Physicians in London, brought the gold-headed cane to this country to the Meeting of the American College of Physicians in Boston. The cane was a feature of the Convocation of the American College. Apparently none of the vicissitudes of travel by boat or by air affected the cane, and it returned, unharmed and unscathed, to its corner in the library of the Royal College of Physicians.

The cane goes back to 1689, when it was first carried by Radcliffe. It was subsequently carried by Drs. Mead, Askew, Pitcairn, and Baillie. Mrs. Baillie presented the cane to the Royal College of Physicians a short time before the opening of the New College. The arms of these celebrated physicians are engraved on the head of the Cane, and in 1950 the arms seemed as fresh as if engraved the day before.

There are moments in our lives that transcend all other moments. One of these I missed. Owing to the complications of schedules, Mrs. Lee, and not I, met Lord

and Lady Moran. On arrival at our humble domicile Lord Moran, one of the kindliest of men, brought out the Gold-Headed Cane and gently remarked to Mrs. Lee, "You probably have never heard of the Gold-Headed Cane." Whereupon, the good lady replied, "Oh yes, I think we have a first edition" and then proceeded to bring forth the same. Believe it or not, neither of us had the slightest notion that Lord Moran was bringing the cane.

When my old friend Dr. Kerr asked me to make a few remarks on this annual occasion, in which Dr. Kerr keeps alive the tradition of the Gold-Headed Cane, I was at first minded to speak of some who were truly worthy of carrying the cane. Why not Bill Kerr himself? Why not some of the worthies that were known to Kerr and myself in Boston? I was indeed tempted to talk of the late Herbert C. Moffitt of San Francisco. He had a brilliant record in the Harvard Medical School and an even more brilliant record as an intern at the Massachusetts General Hospital. His medical records, terse, concise, exact, shine like a beacon light in contrast to the fog of verbosity of the present day.

Dr. Moffitt then took the European tour, in which German pathology was as inevitable as the beer and speaking German. On his return to his native San Francisco, he rapidly became the foremost medical consultant of the Pacific Coast. He took his place as "ein grosser Kliniker." Herbert Moffitt was too versatile, too able, too independent to conform to any pattern. But in a sense there was a pattern. Osler correlated the postmortem findings with the clinical findings. Fitz made his classical descriptions of appendicitis and pancreatitis in the autopsy room. F. C. Shattuck began a real diversion from postmortem studies by feeding living typhoid fever patients. Moffitt, I always felt, was tops of the "grossen Kliniker." He had medical literature always at his command, and his experience became vast. It is well that such "ein grosser Kliniker" should be great, because the type was already passing off the stage.

In general, "ein grosser Kliniker" of the past generation came up the hard way through general practice. Some had done obstetrics and some surgery. The "grosser Kliniker" recognized a few specialties, surgery, of course. He usually had an opposite number among the surgeons, commonly a general surgeon. He was himself an excellent neurologist. Psychiatry was in its infancy. Dermatologists were sometimes useful. Obstetricians were necessary. Pediatricians were tolerated.

Within medicine itself, our "grosser Kliniker" resented heart specialists and kidney specialists. The gastro-enterologists, well, let's delete. By and large, the great medical clinicians of yesterday were diagnosticians. Their diagnosis was based upon pathology as seen in the autopsy room. James Jackson of Boston once described a painful tumor of the right iliac quadrant, the nature of which was not known because such cases did not come to autopsy. But the researches of Fitz in the autopsy room and the surgical demonstrations of living pathology disclosed the nature of the malady. The irresistible wag of that day wanted to know why alcoholic cirrhosis of the liver was usually large in the clinic but always atrophic and small in the autopsy room, a subtle dig at the contrast between living and postmortem pathology.

Rather abruptly at the turn of the last century, a new kind of laboratory came into the medical world. It was a kind of chemical laboratory and was designated

as a physiological chemical or biological chemical laboratory. This was an attempt to study some of the chemical and physiological processes of the living patients. At first the urine was the chief interest. This spread to the gastric juice and finally to the blood.

At the Harvard Medical School I received an education at the time when laboratories were having severe growing pains and had outgrown their short pants. By the time I got to be an intern or house pupil, I was thoroughly confused by the existing laboratory situation. At one time, at the direction of a purely laboratory man (new style or chemical laboratory man), I undertook the feeding of a diet exclusively of arrowroot gruel to patients with typhoid fever. That was some job, particularly as under the benevolent eye of Dr. F. C. Shattuck. I was trying to feed liberally the typhoid fever patients. This Arbeit, note the German influence, or research, as it was called, went on seemingly interminably. When it ended, I went back to trying to feed liberally the patients with typhoid fever. I convinced myself that I could maintain the weight of patients and that the observations of Dr. F. C. Shattuck and Dr. Warren Coleman were sound. Then appeared the monograph on the "Metabolism (a brand new word then) of Patients with Typhoid Fever." This monograph proved conclusively that in the presence of fever, as in typhoid fever, the metabolism of the body was altered so that the febrile patients did not absorb food, in this case arrowroot gruel. As a result of this monograph, the writer of it was appointed Professor of Physiological Chemistry at the Medical School. I was then completely bewildered because I knew it was all wrong, even though very erudite. But I did not then know why it was wrong. I hasten to add that the man became very distinguished and incidentally a very good friend of mine. He used to say with a laugh, "We didn't know much about metabolism then, did we?" And I still wonder if the "then" was necessary. In another fifty or one hundred years, won't somebody say with a laugh, "Those fellows didn't know a d—— thing about metabolism, did they?" And besides, leaving the "then" out, why limit it to metabolism? It may be appropriately said of many of the things we are so positive that we know all about. Have we now any of the final answers? Josiah Royce, not a doctor of medicine and not a scientist but a professor of philosophy, once exclaimed to his friend and colleague, William James, "Damn the Absolute." Nothing in medicine, or in science, is absolute or fixed. Even the absolute minimum of yesterday, the atom, has been fragmented.

Dr. Henry P. Walcott once told me that on his return from Vienna (now nearly a hundred years ago), he sadly reflected that everything worthwhile in medicine had been discovered and that there were no new worlds to conquer. But, he added, everything that is worthwhile in medicine has been discovered since that time, and he expected a continuous repetition of the process.

During the nearly fifty years of my own experience, I can only subscribe to that opinion. Everything worthwhile in medicine has largely been discovered or developed since I graduated in medicine. Blood chemistry did not then exist, largely because, curiously enough, it was considered dangerous to insert a needle in a vein. And this was only a few years after doctors almost invariably bled their patients! Blood chemistry proudly promised to tell us all the secrets of human life. I recall that I once remarked facetiously to an elderly hardened sinner, as I withdrew some blood from his vein, that I would know all the secrets of his life. I was going to

do a Wassermann test on one lot of blood. I was also going to do a blood sugar, a non-protein nitrogen and the then newly devised uric acid estimation. Incidentally I was going to do routine blood counts and a stained smear. He said to me, "How much blood have you taken?" When I showed him, he dryly commented, "Not on that amount of blood." But blood chemistry of today is only a step nearer the center of things than the urinary chemistry of yesterday. We now think that the cellular metabolism holds the master key. But does it? The charm of the word metabolism still persists.

I recall vividly taking a patient years ago to the room back of the apothecary shop at the Massachusetts General Hospital. This was where the x-ray machine was set up. This was to be the first trial of an opaque meal, then bismuth, in the Hospital. We all peered through the fluoroscope and awaited the development of the negatives. My own impression was that it looked like a London fog. However, a professor of physiology, who was there, declared that from a physiological viewpoint it must be an abnormal stomach. The two surgeons, who were there, agreed that the case demanded immediate operation. At operation, a normal stomach was found. In those days, we were hopeful of utilizing the x-rays for the discovery of pulmonary lesions. The tuberculosis experts declared that nothing and certainly not the x-ray would ever supplant auscultation and percussion. Today auscultation and percussion are largely lost arts. Diagnoses are often made of tuberculosis of the lungs by x-ray without seeing the patient, and of heart disease by x-ray and electrocardiograph without viewing the patient.

Claude Bernard some seventy years ago predicted the golden age of medicine. His golden age was dependent on applied physiology. It was in essence the application of experimental medicine. It operated in the laboratory, in the clinic, and at the bedside. Claude Bernard insisted that when we knew a little more chemistry and a little more physics, we could then learn more about the physiology of the entire body. We should be able then and then only to know the inner secrets of all the bodily functions or, in the vernacular of today, what makes a man "click." Laboratory and experimental data would be utilized for man. It should be possible to discover what made one man tired and another man energetic or, again in the vernacular, "peppy." The accumulated observations are already enormous. Some years ago a physiologist, Professor Walter B. Cannon of Harvard, found that one result of human anger was increased sugar in the blood. The newspaper reporter wrote, "Rage makes a man sweeter." The physiologist wrote that a probable sequel of anger was violent physical exertion which would cause the combustion of sugar. Hence, nature furnished more sugar.

The application of glandular and hormone therapy comes into the concept of Claude Bernard. Likewise does the ingestion of foods, of vitamins, of minerals, and of water. The surgeons are making experiments on the shortening of bed rest after operation. We are indeed questioning prolonged rest after injury.

Claude Bernard's objective for this golden age of medicine was a better, fuller, and happier life. This concept applies to every age of life but particularly to the vast problem of better care and better treatment of our increasing aged population. Obviously, no part of man is omitted, not his brain, not his nervous system, not his heart, and not his skin. But man is to be regarded as a whole being and not divided up into separate unrelated segments. And have we not a beautiful illustra-

tion of this when we treat a certain variety of renal calculi by the removal of tiny parathyroid tumors in the neck or in the mediastinum? We cannot feel these tumors, the x-rays do not disclose them but we know from the examination of the blood that such a tumor exists.

Psychosomatic medicine is rather a clumsy term and quite unknown to Claude Bernard, but his meaning is clear. One treats the whole patient and not the disease and certainly not the x-ray film or the electrocardiogram.

In a word, Claude Bernard's concept was not the prevention of disease and the avoidance of illness, but a positive and aggressive activity towards the betterment of man as an entity.

I do not mean to belittle the contributions of pathology to our modern medical knowledge. But to reiterate what I have said before, the pathology of the days of "die grossen Kliniker" was the pathology of the dead. It was the end result of disease. Furthermore, it was too often associated with academic curiosity and a therapeutic nihilism.

Due to a certain factor, perhaps known to some of you as financial, I postponed for nearly ten years after my graduation the European tour which seemed at that time to cap the climax of one's medical education. I envied my friends who, on their return, spoke of the pathological riches of the Allgemeines Krankenhaus in Vienna. But mark you this, I was nearly ten years older than they. I was sincerely interested in clinical medicine, in the patient, in his alleviation and possible cure. From the first I was shocked and horrified at the nearly total disregard of the sensibilities of the patient and indeed of his welfare. Of course, I am speaking of Germany and Austria. I did go, and reverently, to the Institute Pasteur in Paris and to Guys and "Barts" in London. I had no difficulty in understanding the ideology which brought on World War I and World War II.

But when Bill Kerr asked me to make some remarks on this Gold-Headed Cane occasion, I found myself in a dilemma. I have known and loved many of the great physicians who were the giants of Medicine of yesterday, worthy followers of those great British physicians whose crests are engraved on the head of the cane which stands in the library of the New College of Physicians in London. And yet, I have a belief, a conviction, and almost an obsession that Medicine must always look ahead and not backwards. You all recall the conflict between Hippocrates and the Academicians so many years ago. Today a great sister profession, the Law, tends to turn backwards to its books for the solution of many of its major problems. Another great sister profession, Divinity, is seemingly engaged in a death struggle for its existence by living so largely in the past.

But I am getting sentimental and perhaps controversial. And why have I not mentioned more than casually the glorious work of Pasteur and the present day rapid elimination of infectious diseases? All this is wonderful and totally admirable. However, it does not seem to me and, I admit to following Claude Bernard closely, I do not think it is the ideal that Medicine should strive for. The prevention or cure of an infectious disease is very, very important. But it is, in a sense, negative rather than positive. It is better than giving a tablet for a headache or a capsule for sleep. But, in my opinion, we are on the road to a more positive medical program. We are no longer interested in what men die of, except as that helps us to correct or cure the early beginnings of disease. We want not just to keep patients alive, we want to keep them useful and happy.

We of the medical profession are saving many, many lives by our successful fight against infectious disease. As one result of this, our aged population is increasing rapidly. Is it enough that the elderly should stay merely alive, a burden to themselves and their families? No, our experience has already demonstrated that it is not a problem of economics or of liberal old-age pensions. Even the aged must be contented, busy, and useful. We will all agree that the desideratum is not a longer life but a happier and better life for all, including the aged.

The oldest living things in the world are, as far as I at least know, your giant sequoia, great, noble, useful, long-lived trees. I recommend to all of you interested in the problems of the elderly the Life of Charles Lamb. Charles Lamb finally acquired relief from what he called servile toil. Yet the ecstasy of his retirement was very transitory. He became utterly miserable without an occupation and died shortly.

And while I, like the grave digger and Hamlet, shed a tear on finding the skull of Yorick, I feel like Hamlet. "Alas, I knew die grossen Kliniker, Horatio." But I remember, too, the stages of man as recounted by the same Shakespeare. The last age of man's seven parts, as you recall, is sans everything. Jacques concludes:

> Last scene of all
> That ends this strange eventful history
> Is second childishness, and mere oblivion
> Sans teeth, sans eyes, sans taste, sans everything.

What a direful scene and what a calamity to be averted by Medicine of the future.

ANNOUNCEMENTS

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

Twenty-Fifth Annual Meeting: Kansas City, Kansas, May 1-3, 1952

The twenty-fifth annual meeting of the American Association of the History of Medicine will be held at Kansas City, Kansas, May 1-3, 1952, with headquarters at the University of Kansas Medical Center. The Town House, Kansas City, Kansas, is the official hotel.

Dr. George Sarton will deliver the two Clendening Lectures on "The Alexandrian Renaissance (Third Century B. C.)" and "Galen, Physician and Philosopher (Second Half of Second Century)"; Dr. Benjamin Spector will deliver the Garrison Lecture on "The Growth of Medicine and the Letter of the Law."

The program, consisting of ten papers, also includes a visit to the main campus of Kansas University, Lawrence, Kansas, where one of the Clendening Lectures will be given, a visit to the William Rockhill Nelson Gallery of Art, and an informal banquet, at which the speaker will be Chancellor Franklin D. Murphy of the University of Kansas.

There will also be a special program for wives and other visiting ladies.

Dr. Edward H. Hashinger, University of Kansas Medical Center, Kansas City 3, Kansas, is Chairman of the Program Committee.

THE JOHNS HOPKINS UNIVERSITY

INSTITUTE OF THE HISTORY OF MEDICINE

Fellowships in the History of Medicine and of Science

Two or three Fellowships of from $2,000 to $3,000 each will be offered in the Institute during the Academic Year 1952-53.

The Fellowships are intended to enable mature students who are interested in the history and social aspects of medicine, or of other sciences, to spend a year at the Institute in order to pursue further study in these fields. Arrangements will be informal and will usually have no relation to degrees.

Fellows will make their headquarters in the Institute, and must not undertake any work outside of their program there. They will be expected to take certain courses in the Institute and in other departments in the University, on the advice of the staff. Fellows who are still candidates for the Ph. D. in other institutions, however, will be at liberty to devote approximately half of their time to work on their theses; and may be asked to report on this research to classes when appropriate.

Applicants must be citizens of the United States or of Canada and under forty

years of age. They must either hold the M. D. or the Ph. D. degree, or must have completed residence requirements for the latter degree.

Applicants should provide the usual personal information concerning birthplace, age, sex, marital status, health, training and experience, foreign languages, present work, any applications being made for other fellowships or grants, and a brief statement of future plans. They should also request three or more colleagues or professors to write in support of their applications.

Applications may be addressed to the Director of the Institute, 1900 East Monument Street, Baltimore 5, Maryland. Applications for fellowships in 1952-53 should be received prior to May 15, 1952. Those wishing to apply for possible fellowships in 1953-54 are urged to do so not later than November 1, 1952.

NATIONAL NEWS

American Academy of Dermatology and Syphilology

On the occasion of the tenth annual meeting of the American Academy of Dermatology and Syphilology, held in Chicago, a symposium was arranged on December 12, 1951, under the direction of Dr. Samuel J. Zakon (Northwestern University Medical School, Chicago, Ill.) dealing with the history of Austrian and German dermatology. The speakers were:

Clark W. Finnerud: "Ferdinand Hebra and the Vienna School"
Udo J. Wile: "Paul G. Unna"
Marion B. Sulzberger and Max Jessner: "Joseph Jadassohn"
Hans M. Buley: "German Schools of Dermatology in the Past Century"

Drs. Wile, Sulzberger, Finnerud, Buley, and Zakon engaged in a round table discussion on dermatologic terms, eponyms, and syndromes. An exhibit on Hebra, Unna, and Jadassohn, showing books, photos, letters, and notebooks, was arranged by Miss Elizabeth Carr and Miss Georgia Price from the Library of Northwestern University Medical School.

Baltimore

The Johns Hopkins Medical History Club held its first meeting of the year on Monday, January 7, 1952, in the Lecture Hall of the Institute of the History of Medicine. The following papers were read:

Heinrich Buess (Basel): "The Status of Medical History in Switzerland"
A. Earl Walker: "Early American Cranial Surgery"
John B. Blake: "The Medical Profession and Public Health in Colonial Boston"

The new officers elected at the meeting are: Owsei Temkin, president; A. Earl Walker, vice-president; Victor McKusick, secretary; Richard H. Shryock, delegate to the American Association of the History of Medicine.

A centenary celebration of the birth of William Stewart Halsted was held at the Johns Hopkins Hospital in conjunction with the meetings of The Society of University Surgeons, The Society of Clinical Surgery, and The Halsted Club, February 6, 7, 8 and 9, 1952. Dr. Sanford V. Larkey, Director of the Welch Medical Library, arranged an exhibit of publications, notebooks, letters, and other material illustrating the surgical career of Halsted. The exhibit is on display on the third floor of the Library (Institute of the History of Medicine).

Chicago

The Society of Medical History of Chicago announces a meeting for February 21, 1952, with the following program:

Emmet B. Bay: "Coronary Disease: An Historical Enigma"
Franklin C. McLean: "The Good Old Times in Medicine"
Ilza Veith: "Malingerer and Diagnostician: Antagonists of Old"

New York

An exhibition of printed works and manuscripts of Antoine-Laurent Lavoisier will be held at the Grolier Club, 47 East 60th Street, New York 22, N. Y., from Tuesday, February 19, to Tuesday, March 18, 1952, and a printed catalogue will be available there at that itme.

Philadelphia

The program of the Section on Otolaryngology of the College of Physicians for Wednesday, November 21, 1941, included an address by Dorothy Wolff on "The Organ of Corti as we see it today, one hundred years after its discovery," with discussion opened by Oscar V. Batson.

The Section on Medical History of the College of Physicians in conjunction with the Woman's Medical College of Pennsylvania announced for January 24, 1952, a lecture by Kenneth J. Franklin, M. D., D. Sc., F. R. C. P., Professor of Physiology at the Medical College of St. Bartholomew's Hospital, London, on: "The history of circulatory research, leading to a wider view of the circulation." The program of the meeting of the Section for February 28 provides the following papers:

Joseph V. Klauder: "The Development of the British School of Dermatology"
E. J. G. Beardsley: "Historical Background and Influences Which Resulted in the Origin of a Unique Medico-Legal Organization: The Medical Diagnostic Clinic of The Municipal Court of Philadelphia"

NEWS FROM ABROAD

International Congress on Medical Librarianship

The following notice has been received from the British Council with the request for announcement in the *Bulletin*:

It is proposed to hold an International Congress on Medical Librarianship in London in July 1953. Sir Cecil Wakely, K. B. E., C. B., President of the Royal College of Surgeons of England, has kindly consented to accept the honorary

presidency of the Congress. The programme will include formal sessions for reading and discussion of papers, visits to medical libraries and social functions. It is hoped also to have in connection with the Congress an exhibition of medical books and periodicals and library equipment. All those actively engaged or interested in medical librarianship throughout the world are invited to participate. Requests for further information may be addressed in advance to the Honorary Secretary, First International Congress on Medical Librarianship, c/o The London School of Hygiene and Tropical Medicine, Keppel Street, London W. C. 1.

Belgium

The Comité Belge d'Historie des Sciences, Professor Jean Pelseneer, Secretary, arranged a medico-historical "Weekend" on November 24-25, 1951, at the Fondation Universitaire, 11 rue d'Egmont, Brussels. Upon our request, Dr. John F. Fulton who, together with Dr. Ernest Wickersheimer, was guest of honor at a luncheon given on November 24, kindly put at the disposal of the *Bulletin* a copy of the program from which we extract the following details.

The session on the afternoon of November 24 was devoted to a paper by Dr. J. DePaepe on "Contacts with the native healers in Uele" and communications on various subjects by Dr. F. Jonckheere (Egyptian medicine), Dr. W. Dulière (Avicenna), and Dr. M. Welsch ("The biological concept of infectious disease"). On the morning of November 25, Dr. B. Dujardin talked on the description of syphilis in a Chinese text of the twelfth century, and on the appreciation of medical science by William, Bishop of Lyon. Dr. G. Coppée, discussed hypotheses on the mechanism of hearing advanced in the 17th and 18th centuries. Professor M. Florkin had as his topic Th. Schwann's records of experiments on spontaneous generation, and Dr. E. Wickersheimer brought the session to an end with an illustrated lecture on "Hospital buildings through the ages." The afternoon of November 25 was given over to a discussion of the history of medicine in Belgium with M. Florkin ("Leibniz and the waters of Spa"), Dr. C. Heymans (Palfijn), Dr. J. Verbrugge (surgery of fractures), and Professor A. Dalcq ("Participation of Belgian investigators in the progress of knowledge concerning morphogenesis") as speakers.

India

According to a communication received from Dr. D. Narayana Roa, Secretary, a number of scholars belonging to the Ayurvedic and Allopathic systems of medicine assembled on July 16, 1951, in the home of Dr. D. V. Subba Reddy, M. B., B. S., M. Ss., Principal of the Medical College, Guntur, Arundelpet, South India, and Corresponding Member of the American Association of the History of Medicine, and under his presidency formed an association under the name of "Nagarjuna Club of the History of Indian Medicine" for the study of the history of medicine of India, especially of South India. Dr. Reddy explained the necessity for the formation of such clubs and the importance of the study of the history of medicine in general and of indigenous medicine in particular. He brought to the notice of the members the working of such clubs in America.

Among other things it was resolved to organize a museum and a library relating

to the history of medicine in Guntur and to edit monthly a Bulletin of the Association. Dr. Roa remarks that this club may be the first of its kind in India.

Italy

Dr. Loris Premuda has been appointed to the newly created chair of the history of medicine at the University of Ferrara.

Scotland

The Scottish Society of the History of Medicine, Dr. Douglas Guthrie, President, and Dr. H. P. Tait, Honorary Secretary, has published its *Report of Proceedings* for the Session 1950-51. The membership now exceeds the hundred mark, and the *Report* contains brief accounts of the ninth (Edinburgh, October 16, 1950), tenth (Glasgow, February 12, 1951), and eleventh (Aberdeen, June 16, 1951) meetings of the Society. An appendix lists the " Contents of the exhibition of incunabula and old medical books at King's College, Aberdeen " arranged by Dr. W. S. Mitchell.

THE BULLETIN OF THE HISTORY OF MEDICINE IN 1952

The agreement between the American Association of the History of Medicine and the Johns Hopkins University concerning the publication of the Bulletin was renewed for 1952. The text of the agreement is printed here for the information of the readers of the Bulletin.

Agreement Between the American Association of the History of Medicine and the Johns Hopkins University in Regard to the Publication of the Bulletin of the History of Medicine

This agreement between the American Association of the History of Medicine and the Johns Hopkins University is made for the purpose of continuing the publication of the Bulletin of the History of Medicine for a period of one year from January 1952. Both parties agree to the following stipulations which are hereby made a part of the agreement:

1. The Bulletin is to be recognized as the organ of the Association and of the Institute of the History of Medicine of the University.

2. The University is the sole owner of the Bulletin and assumes full responsibility for its publication, both editorial and financial.

3. All active members and honorary members of the Association and the Constituent Societies of the Association shall receive subscriptions to the Bulletin in return for which the University shall be reimbursed by the Association on the basis of a schedule of rates set forth below.

4. The Editor of the Bulletin is to be selected solely by the University.

5. The Editor shall have the sole responsibility for determining what matter shall be published in the Bulletin except as specified in the next following tipulation.

6. The minutes of all business sessions of the Association, and of all meetings of the Council of the Association, shall be published in the Bulletin, provided that the total number of pages devoted to this material in any one volume shall not exceed 5 per cent of the entire volume.

7. The Bulletin shall contain a minimum of 500 pages of printed matter exclusive of advertisements during the year but shall not exceed a maximum of 800 pages.

8. The regular subscription price shall be $6.00 a year in the U. S. A. and its possessions, $6.25 a year in Canada, and $6.50 a year in foreign countries.

9. The University shall be reimbursed by the Association for subscriptions sent to active members of the Association and to the Constituent Societies in accordance with the following schedule of rates:

$5.00 per year in the case of active members and
$6.00 in the case of Constituent Societies.

10. All corresponding members of the Association shall receive the Bulletin in return for which the University shall be reimbursed by the Association at the rate of $5.50 per year for each corresponding member.

11. A financial report of the publication of the Bulletin will be rendered to the Association as soon as possible after the close of the year.

12. This agreement expires as of December 31, 1952, unless renewed.

BOOK REVIEWS

DOROTHY M. SCHULLIAN AND FRANCIS E. SOMMER. *A Catalogue of Incunabula and Manuscripts in the Army Medical Library.* New York: Henry Schuman, 1950. xiii + 361 pp. Ill. $15.00.

In the preface to this volume, Max Fisch calls attention to the fact that "Though intended primarily to serve the medical officers of the armed forces, the Army Medical Library has gradually become the national medical library." In truth the Army Medical Library and the Library of Congress constitute an American Bibliothèque Nationale. The Schullian-Sommer Catalogue well exemplifies this fact by its descriptions of the many precious items in the Army Medical treasure-house which constitute an important part of the Nation's rare-book-and-manuscript collections.

Like the collection itself, the catalogue is an impressive achievement in letters and arts, as well as in medicine. It is significant that Miss Schullian, the author of the section on incunabula and Western manuscripts, is an eminent humanistic scholar, and that the list of pre-publication subscribers includes more university libraries than medical libraries, to say nothing of institutions such as the Bodleian Library at Oxford, the Boston Athenaeum, the Metropolitan Museum of Art, the Pierpont Morgan Library, the Huntington Library, Das Antiquariat in Vienna, Sandberg's Bokhandel in Stockholm, and the British Embassy in Washington.

The volume is a guide for booklovers as well as physicians, since a considerable number of the 490 incunabula and several of the Western manuscripts are non-medical. Among these are works concerning natural history, theology, philosophy, canon law, astronomy and astrology, psychology, zoology, mineralogy, history, geography, agriculture, mechanics, and literature. Among the authors represented are Aristotle, Porphyry, Cicero, Varro, Seneca, Pliny the Elder, Boethius, Isidore, Rabanus Maurus, Aquinas, Lull, Duns Scotus, Gratian, Ficino, Gerson, and Petrarch. But, lest it be inferred that the catalogue has little to do with medicine, it should be noted that the outstanding medical men of ancient, medieval, and early renaissance times are well represented. Here one finds works of Hippocrates, Celsus, Galen, Averroes, Avicenna, Maimonides, Macer Floridus, Serapion, Gilles de Corbeil, Guy de Chauliac, Mondino, Petrus Hispanus, Arnaldo de Villanova, Bernard of Gordon, Gentile da Foligno, Matteo Silvatico, and Ketham; also especially fine collections of the works of Rhasis, Mesue, Pietro Abano, and the Regimen Sanitatis Salernitanum.

The catalogue falls into three distinct divisions, concerned with incunabula, early Western manuscripts, and Oriental manuscripts. The division devoted to incunabula is the longest and doubtless will prove most interesting to the majority of readers; it occupies over 200 of the some 350 pages of the volume. Humanistic and aesthetic emphases are well exemplified in the seven full page illustrations of this division. They depict a rare-book binding, a printer's monogram, three printed folios, a compotus diagram, and a head-torso anatomical sketch. Personally

we could have wished for the addition of at least one of the interesting anatomical sketches in incunabula 272 and 274 which show the interest of fifteenth-century students in noses. There is, however, a reproduction of one of these sketches, with detailed comments, in Sigerist's article in *Bull. Hist. Med.*, 1943, 13, 313-319. Three other photographic reproductions from the incunabula are to be found in an article by Miss Schullian in *Bull. Med. Lib. Assoc.*, 1945, 33, 413-448.

By and large, scholarly interests are the major factor in the volume. That it is an excellent reference work, we proved daily during a month of research in the incunabula and manuscripts at the Cleveland branch of the library. In the first place, it should be distinguished from checklists such as Klebs' "Short Title List," Stillwell's "Census" and other comprehensive listings which contain many more items but lack extensive bibliographical detail for the individual items. This catalogue is in a class with the descriptive handbooks of such collections as the Huntington, the Pierpont Morgan, the Boston Medical, and the Library of Congress. And, in this class, we believe that the Schullian-Sommer catalogue is outstanding both in quantity and quality of coverage. A page by page comparison of the same incunabula items in Schullian and in one of the best recent collection-catalogues reveals the following. Although both were alike for most items (giving only brief 4-5 line listings), in descriptions of special items the Schullian catalogue seemed to have more detail, and more critical data, in almost every case. For example, Schullian has a half-page analysis of the 1490 Venetian edition of Galen, as compared with five lines in the other catalogue; in another extreme case, the ratio ran as high as 61 lines (in Schullian) to a 5 line listing in the other. In the rare cases in which the other volume had a better analysis, it was cited in Schullian.

It is evident that the Army Medical Library has a catalogue of which it can be proud; it is a worthy description of a worthy collection. It should be remembered, however, that the majority of the entries in the catalogue are brief listings, giving the size of the volume, the former owners, and references to Klebs, Stillwell, etc. The lengthier entries, running to a half page or more, are usually concerned with eccentricities of bindings, missing pages, variant readings, etc., and occasionally with critical comments and references to bibliographical literature. Items such as numbers 76 and 229 clearly reveal Miss Schullian's ability as an incunabulist. Of interest to the non-specialist are the listings of marginalia. For example, from a copy of Pliny's Natural History (number 372) over a page of commentary is quoted, including an excerpt from Vergil "contra medicos," comments concerning the rhinoceros, the hare, the arts, etc., a note by an eye witness concerning the finding of the Laocoon group in Rome in 1506, and a reference to the spread of the "French disease" throughout Europe in 1496. From number 377 a half page of love poetry is quoted; from 344, six lines of a Christmas poem. Six verses of an English translation of parts of the Regimen Sanitatis Salernitanum (from number 387) and a two-verse exchange between pupil and teacher (from number 117) might well have appeared in the catalogue, but they can be found in the above mentioned article by Miss Schullian (pp. 418, 425). From number 181 the catalogue quotes the conditions on which a certain "Brother Paul" donated several books to a Carthusian monastery near Trier. Probably the most intriguing entries in the catalogue have to do with "strands of blond hair laid in at f. 115" of number 260,

and "two birdshot, formerly embedded in front cover, now wired to lower clasp" (of number 43).

But the catalogue also has details concerning medicine. The Latin text of an inscription on the first folio of number 318 records the following: Sebastian Reiner "received [this] in the year 1802 as a gift from the Reverend Father Dionysius Ebe, in memory of a vaccination begun and successfully performed with him." The significance of this gift is explained fully in Miss Schullian's article "Old Volumes Shake Their Vellum Heads" (*Bull. Med. Lib. Assoc.*, 1945, 33, 415), which contains a photographic reproduction of the folio. Incidentally, a reprint of this fascinating article might well be enclosed with each copy of the catalogue as a human-interest supplement to the more formal technical data of the bibliographical compendium.

The section on Early Western Manuscripts indicates that the Library's manuscript collection is devoted almost entirely to medicine. Most of the items are from the late Middle Ages (fourteenth-fifteenth centuries). Noteworthy exceptions, all from the thirteenth century, contain Aristotle's De Animalibus, Gerard du Berry's super Viatico Constantini, and Johannes de Sancto Paulo's Breviarium. In this section the bibliographical data on each item are even more impressive than in the case of the incunabula. In addition to the usual details on bindings, gatherings, missing folios, owner signatures, etc., the contents are listed, with ample incipits and explicits. In many cases there are critical notes concerning printed editions, omissions and variants in the reading, etc., and citations of scholarly handbooks such as Thorndike and Kibre, *Catalogue of Incipits*.

The section of the catalogue concerning Oriental Manuscripts, by Francis Sommer, presents brief descriptions of 137 manuscripts; 92 Arabic, 28 Persian, 9 Turkish, 7 Singhalese, and 1 Hebrew. Three full page plates serve to illuminate slightly these mysteriously unintelligible volumes. It would be useless for the present reviewer to attempt any critical analysis of this work; it impresses us as a formidable achievement.

But, since no reviewer dares to jeopardize his scholarly reputation by failing to find some faults in a volume, we turn to Miss Schullian's section of the Catalogue. Try as we might, it was impossible to discover any serious defects. However, we resort to a few queries, which may be merely querulous admissions of the reviewer's ignorance of certain bibliographical techniques. Why do cataloguers (of this work, and also of others) withhold the total number of pages or folios of incunabula (in the case of manuscripts, the totals are given), at the same time insisting that the reader be informed as to the exact measurements, in "mm"? What is the meaning of "$a\text{-}d^{8.12}$," "$a^{4}a\text{-}m^{8}$," ". . . $z^{8}7^{6}$ . . ." and "$1\text{-}6^{10.6}$" in the description of numbers 46, 92, 244, and 521 respectively? (Two friends who are by no means amateurs at incunabula, when faced with these shook their heads in perplexity). Turning to the manuscript section, why was there no mention of the fact that number 493, Aristotle's De Animalibus is the noteworthy Michael Scot translation from the Arabic? How is it that number 492 is listed as "14th century" whereas the final lines of the quoted text indicate that someone completed the copying in "septembris M.CC.lxxxij."; is the manuscript a fourteenth-century copy of a thirteenth-century manuscript? Why were not numbers 493, 495, 496, 509, 520, 522,

and 525 given the same critical attention (e. g., references to Thorndike and Kibre, *Catalogue of Incipits*, etc.) as was given to numbers 491, 492, 494, 505, 511, etc.? We end our deliberately pedantic and carping criticisms with hearty congratulations; to the authoress for her scholarly achievement, to the publisher for having given the work such an attractive physical appearance, and to the Army Medical Library for the foresight of its past and present directors in building such a splendid collection.

LOREN C. MACKINNEY

RENÉ VERRIER. *Études sur Arnaud de Villeneuve, 1240(?)-1311.* Leiden: E. J. Brill, 1949. 170 pp., 8 plates.

With this monograph the author continues the studies on Arnald which he so auspiciously initiated a few years ago.[1] The book is devoted to two main problems, the authorship of the *Breviarium practicae*, and — closely related to it — the question of Arnald s studies at Naples.

We know that Arnald had very close connections with Montpellier. He was there in his formative years in the early sixties, married there, and later was a professor at the Medical School. We also know that toward the end of his life he was in touch with the Court of Naples. Did he ever study at the University of Naples which was reorganized in 1267 after the French conquest? If the *Breviarium* is Arnald's work it seems very likely that he was at Naples, between 1267 and 1276. If the treatise, however, is not authentic and was written by some other Arnald, the question remains open.

The *Breviarium practicae* is a very important and, in spite of its title, quite comprehensive textbook of medicine. It is preserved in manuscripts, was printed in the 15th century, and was incorporated into the *Opera omnia* of Arnald. The author refers in it to the death of his venerated master, John of Casamicciola, who was professor of medicine at the University of Naples from 1267 to 1278 and died in 1282. The book, therefore, must have been written after that date. It contains many quotations from Italian medical writers or references to Italian persons, more than we commonly find in the works of Arnald. It was written *in monasterio case nove ordinis cisterciensis*, which may be a monastery in the Abruzzi not far from Naples. In a manuscript of 1429 the author appears as *Arnaldus de Nova Villa domini pape physicus*, and it seems that from that time on the treatise was generally attributed to Arnald of Villanova. Yet the close connection of the writer with Italy, and particularly Naples, and the scarcity or even lack of references to France and Spain so frequent in other works of Arnald, have induced notably Italian historians to assume that the treatise was written by some other Arnald, an Arnaldus Neapolitanus or an Arnoldus Novicomensis. The Arnald of Naples is purely hypothetical. Historians — Malacarne, de Renzi, Tiraboschi, Puccinotti — assumed that he must have lived in the second half of the 14th century. This would explain references to Guy de Chauliac and Bernard

[1] See this *Bulletin*, 1948, 22: 719-720.

Forestier which, however, undoubtedly, are later interpolations as Verrier shows very convincingly. Arnold of Como is a hypothetical personality also. In 1541 G. H. Ryff in Strasbourg published *Arnoldi Novicomensis opera quae edita sunt hactenus omnia* which included the *Breviarium*, but nothing is known of such an Arnold, and Verrier, in a very illuminating chapter discussing the various *Regimina sanitatis*, demonstrates the tendency of Northern Italy to appropriate for itself books written in the South.

The *Opera omnia* of Arnald of Villanova contain three *Regimina sanitatis*. One, the *Regimen sanitatis ad Regem Aragonum* is undoubtedly Arnald's own work, and was written in 1307 at Montpellier. The second, *Regimen sanitatis*, is the work of a Lombard physician, Maino de Maineri (Magninus Mediolanensis), written 1331-1333 at Arras; and finally there is the well-known and so extremely popular *Regimen sanitatis salernitanum* with the commentary attributed to Arnald. Verrier thinks, and I believe he is right, that the commentary was written in the second half of the 15th century at Louvain, by an author (probably John of Westphalia) who refers to his country as *patriae Brabantiae*. The poem itself, obviously, is older but was unknown at Naples and Montpellier around 1300, and is probably the work of John of Milan (Johannes de Mediolano).

As to the *Breviarium*, its authorship remains uncertain. Verrier is inclined to believe that it is the work of Arnald of Villanova and that it was written between 1305 and 1310, but he frankly admits that a good case can be made for the opposite thesis. If Arnald did write the book, then he must have worked at Naples while he was still a young man and Verrier gives us a very good account of medical conditions in the southern cultural center at the time, and particularly of the personality of John of Casamicciola who was the leading figure in the Medical School.

HENRY E. SIGERIST

AXEL GARBOE. *Thomas Bartholin.* Et bidrag til Dansk natur- og laegevidenskabs historie i det 17. aarhundrede (A contribution to the history of Danish natural and medical science in the seventeenth century), vol. II, English summary of vols. I and II. Copenhagen: Ejnar Munksgaard, 1950. 203 pp. Ill. Dan. kr. 21 (Acta Historica Scientiarum Naturalium et Medicinalium, edidit Bibliotheca Universitatis Hauniensis, vol. VI).

The first volume was reviewed in the *Bulletin of the History of Medicine*, vol. XXIV, no. 3, 1950, 296-298. To recapitulate briefly: Thomas Bartholin was born in 1616 into the Fincke-Bartholin clans who were leaders in the University of Copenhagen during the entire seventeenth century. After his preliminary education he spent ten years abroad studying and also writing many of his most learned works. He returned to Copenhagen in 1646; in 1648 he was given a chair in the department of anatomy at the university. He was then already famous in the learned Europe; pupils flocked to his chair from far and near so that the university gained hitherto unknown fame. In 1652 he demonstrated the thoracic duct in man; in 1653 the lymphatic system in dogs; and while the priority question between him

and Olof Rudbeck of Sweden occupied the learned world, he dissected one cadaver after another, hoping to demonstrate the lymphatic system in man. He succeeded in the spring of 1654, under quite dramatic circumstances, described in detail by Dr. Garboe. Two years later, having been professor of anatomy for eight years, he resigned from active work on account of ill health (renal calculus).

The second volume deals with his work as Professor Honorarius and his continued activities in the interest of the university; continued literary productions; family life at his estate Hagestedgaard about 70 km. from Copenhagen; Stensen's visit and demonstrations in the *Domus Anatomica;* and Bartholin's last years. There is an English resumé and an index of personal and place names. Excellent paper and printing seem to be taken for granted in modern Scandinavia.

In a preface to his second volume the author makes a fervent plea for historians and philologists to profit by an examination of the wealth of material locked up in Thomas Bartholin's literary productions. He points out the value of the wide-flung correspondence with so many of the famous men of the period. Letter writers at that time were not inhibited as we are by telephone, telegraph, microfilm and the memo habit as page after page fluttered from their work-tables. Bartholin's letters vibrate with the impact of discoveries and conflicts in science and anatomy. His book *De medicina Danorum domestica* (1666) contains cultural and medical material of priceless value. The same is true of *Acta medica et philosophica Hafniensia* which he began to publish in 1673. This was the first publication of its kind in the North to give scientists an opportunity to have treatises printed in a definite place, but it was so much the work of Bartholin that it was discontinued after his death in 1680. While the contents are of unequal merit — e. g. the information that a cow had given birth to thirty puppies in addition to a calf — there are articles by such men as Stensen which show that men had begun to put aside ancient authority and were thinking in modern terms. For many years Bartholin had collected material for a work on pathological anatomy which he considered the basis of therapy, but this material, as well as an edition of Celsus and many illustrations for a planned anatomical atlas, were lost when his estate, Hagestedgaard, burned down in 1670.

Danish historians at the end of the nineteenth century, such as A. D. Jörgensen (1884) and Julius Petersen (1884), had much to do with the somewhat unfavorable picture of Thomas Bartholin which Dr. Garboe and other modern writers such as Axel Hansen, G. Tryde, and Vilhelm Maar have modified and clarified. Bartholin was criticized for an exaggerated and pompous style. It is true that he often used flowery and lofty phrases (as did Bichat and no one blaming him), references, hypotheses, and postulates more than observations in proving the results of his researches; that he was more interested in the unusual than in common things. He was brought up to be "learned." Like Montaigne he had heard and spoken Latin from his toddling years. Could it not be that he loved the ancients and their languages — the "surge and thunder of the Odyssey" and the clarity of the Latin? That he was simply fond of literature?

Much was also said about his early retirement from active anatomical work where so many riddles were awaiting solution. The same reproach may be directed against Vesalius, Rudbeck, and Stensen. Bartholin was not robust, material was difficult to obtain, frightful epidemics raged at frequent intervals, dissections could only be

carried out during the winter months and in cold rooms while taking snuff to cover the stench and beating the arms to keep hands warm. The greatest amount of ink, however, was spilled to condemn his apparent neglect of his clever prosector, Lyser, and his most illustrious pupil, Stensen, in not giving them an opening at the University of Copenhagen. Dr. Garboe points out that in 1662 the chair of anatomy had been promised to Jacob Henrik Paulli, son of Simon Paulli who, in 1644, had founded the anatomical theatre. Stensen came to Copenhagen in 1664 when there obviously was no vacancy in the anatomical department. Stensen's conversion to catholicism occurred in 1667; he was recalled to Copenhagen in that year, but did not return. He was made anatomicus regius in 1672 and in this way had more freedom than if he had filled a professorial chair with its many extra-curricular duties. He gave several famous demonstrations and was lauded by Bartholin as "this century's new Demokritos." But Stensen became more and more a stranger in his homeland where the life of a convert was bitter in the presence of a stern Lutheran God who was an intimate part of personal and public life. In 1674 he asked permission from the court to renew his studies in Italy, adding that he would be willing to return should he be so ordered, and that he would work for the interest of Denmark's trade with Italy. He then left Denmark for the last time.

Dr. Garboe takes the view that much misunderstanding and lack of exact knowledge of existing conditions were underlying reasons for the belated criticisms of Bartholin's relations to Stensen. It is, moreover, doubtful that Stensen who was a genius, a star of the first order, in love with Italy and its people, would have been happy in the academic circles of Copenhagen. Bartholin himself had very reluctantly returned from Italy.

Few pens have covered such a vast acreage of paper and written on such a variety of subjects as that of Thomas Bartholin. Yet in ploughing through his writings one is aware of his undying interest and earnest desire to solve the problem in hand. The driving force in his life may well be the sentiment expressed in his closing remarks when announcing the discovery of the lymphatic system in man: "God has given us but a short lifetime, not to be spent in useless quarrels but to work honestly for the good of man and the honor of Almighty God." (Nobis angustum vivendi aevum Deus concessit . . . publico bono et laude Omnipotentis candidé exigendum). He had his weaknesses, so easily magnified into leading traits of character in illustrious persons. From a scientific point of view his most serious faults were that he was too uncritical, often naïve and too credulous even for his period, and that he was more interested in the curious, the extraordinary, than in things close at hand and common.

Thomas Bartholin has been accorded a place in the history of medicine as one of the discoverers of the lymphatic system. It seems to me that he should also be known for reasons which made Johann Peter Frank famous in the following century. He instituted the training of midwives to combat the frightful mortality in childbirth; he emphasized in pamphlets and speech the importance of cleanliness, fresh air, and personal hygiene during epidemics. His medical laws obtained until a short time ago. He was filled to the throttle with ideas for making life more livable and the art of medicine more effective.

We are very grateful to Dr. Garboe for his well-written, well-documented, and lively seventeenth century portrayal. The book makes fascinating reading because

of the sauce, the embroidery, the many details which recreate the past. Much of the research for this work was carried out during a debilitating enemy occupation when it became necessary to recall past history to soften sharp corners and to try to map out a possible future.

ANNE TJOMSLAND

CHARLES DARWIN. *Autobiography.* With His Notes and Letters Depicting the Growth of the Origin of Species. New York: Henry Schuman, 1950. 266 pp. Pt. $3.50. [The Life of Science Library, vol. 17.]

More than sixty years ago, Francis Darwin published the *Life and Letters of Charles Darwin.* The work contained his father's autobiography and copious other material. The present publication reprints in handy form the autobiography, the "Reminiscences of my father's everyday life" (with a few omissions), a shortened version of Francis Darwin's chapter on "The foundations of the 'Origin of Species,'" and the bulk of the letters from 1843-1859 bearing on the genesis of the *Origin.* Professor George Gaylord Simpson has added an introductory essay on "The meaning of Darwin," which gives a welcome, even if brief, orientation as to the vicissitudes of Darwinism and its present status.

OWSEI TEMKIN

THE BULLETIN RECENTLY RECEIVED *

Fannie Anderson. *Doctors under Three Flags.* Detroit: Wayne University Press, 1951. x + 185 pp. Ill.

Antonio Benivieni. *Antonii Benivienii De regimine sanitatis ad Laurentium Medicem.* Edito da Luigi Belloni. (Pubblicazione della Società Italiana di Patologia in occasione del II Congresso, Torino, 8-10 giugno 1951). 52 pp. Ill.

Paul Diepgen. *Geschichte der Medizin.* Die historische Entwicklung der Heilkunde und des ärztlichen Lebens. II. Band: I. Hälfte: Von der Medizin der Aufklärung bis zur Begründung der Zellularpathologie (ca. 1740-ca. 1858). Berlin: Walter de Gruyter & Co., 1951. v + 271 pp. Ill. D. M. 24.

Daniel Drake. *An Inaugural Discourse on Medical Education; Delivered at the Opening of the Medical College of Ohio in Cincinnati, 11 November 1820.* With an Introduction by Emmet Field Horine. New York City: Henry Schuman, 1951. xxx + 31 pp. Ill. $5.00.

Judson B. Gilbert. *A Bibliography of Articles on the History of American Medicine Compiled from "Writings on American History" 1902-1937.* New York: New York Academy of Medicine, 1951. 44 pp. $1.25.

Galen. *A Translation of Galen's Hygiene* (*De sanitate tuenda*), by Robert

* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section.

Montraville Green. Springfield, Ill.: Charles C. Thomas, 1951. xvii + 277 pp. $5.75.

Sir Arthur Keith. *Menders of the Maimed.* Philadelphia: J. P. Lippincott Co., 1951. xii + 335 pp. Ill. $10.00.

Hazel Lin. *The Physicians.* A Novel. New York: The John Day Company, 1951. 250 pp. $3.00.

Reinhold F. G. Müller. *Grundsätze altindischer Medizin.* Acta Historica Scientiarum Naturalium et Medicinalium, vol. VIII. Kopenhagen: Ejnar Munksgaard, 1951. 163 pp. $4.00.

Sir Charles Sherrington. *Man on His Nature.* Second edition. Cambridge: at the University Press, 1951. 300 pp. Ill. $6.00.

Charles Singer. *New Worlds and Old.* Essays. London: William Heinemann, 1951. 178 pp. 15s.

Ralph Chester Williams. *The United States Public Health Service, 1798-1950.* Washington D. C.: Commissioned Officers Association of the United States Public Health Service, 1951. 890 pp. Ill. $7.50.

Horst Zoske. *Die Osteologie Vesals.* Untersuchungen zur Geschichte der anatomischen Nomenklatur. Hannover: Schmorl & von Seefeld Nachf., 1951. 156 pp. D. M. 8, 50.

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